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THE
BRITISH INDIAN

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ARTICLE I.

ATTACK OF DOONDIA KHAN'S FORTS OF
KAMONA AND GUNNOURIE.

The attack of Doondia Khan's Forts of Kamona and Gunnourie, were, we believe, the next sieges of any consequence, undertaken in Bengal, after that of Bhurtpoor.

In the 1586th year of our Era, Selim, son of Achar, afterwards better known as Jehangeer, the 4th Mogul Emperor of Hindoostan, was married to the daughter of Rajah Maun Sing. It is to this alliance, which united the Mahomedan house of Delhi to one of the most ancient Hindoo reigning families, that Runmust Khan, the son of Doondia, attributes the emigration of his ancestors from Rajpootana, their subsequent adoption of the Mussulman faith, and final settlement near Kamona in the Doab.

Dependants on the house of Delhi, Doondia's ancestors appear to have attached themselves to Prince Chusero, and to have fallen with his fortunes. In the military pride and habits cherished by the family, when reduced from power and affluence, we recognize, however, the charac-

teristic qualities of that fine race of Rajpoots, from which amidst poverty and ruin, the present head of the family, though a Mussulman, still proudly claims his origin.

In the year 1803, Doondia Khan held certain small estates within the Doab, in Zemindaree, from General Perron, Scindiah's vicegerent, whose ascendancy over the whole of upper Hindoostan was then well established.

The Pergunnahs of Pertampoor and Shikarpoor forming this Zemindaree, were part of a Jeydad, assigned by Scindiah to General Perron, for the support of his regulars, and included the forts of Kanfona, Gunnourie, Anowna and Loharghur, situated in the northern quarter of Coel Allyghur, in north Lat. $27^{\circ} 50'$ Long. 78° , all being of that description of fortifications usually known by the appellation of Mud Forts, then common to almost every estate in the upper Doab.

It is foreign to our purpose to enquire, whether these works of defence had their origin in the state of the local society, or were raised as a protection against those predatory and rapacious foreign enemies, who preceded, occasioned, or followed the decline of the Mogul Government.

Certain it is, they were, on all emergencies, used as places of refuge, and materially assisted the landholders in maintaining that resistance to the ruling power, which ultimately caused the revenue collections to be enforced always by the presence, and often by the services, of a Military force.

At the commencement of the present century, this spirit had risen to such a height within the Doab, of the Ganges and Jumna, that any revenue demanded, unaccompanied by troops, was considered almost as an insult, which it was a point of honor to resent.

Under such circumstances, the vicinity of Perron's force at Allyghur was perhaps one of many causes which occa-

sioned Doondia to keep on good terms with Scindiah's Government. But the Mahrattah war in 1803, the invasion of the Doab by the British, the flight of Perron from Allyghur, the total defeat of Scindiah's Forces, and the cession of that Prince's possessions in upper Hindoostan to the East India Company, altered the relations of this Chief, and rendered him subject to the British Government; while the war with Holkar in 1804, his defeat of Colonel Monson, and incursions into the Doab, his pursuit by General Lake, and finally the siege of Bhurtpoor, prevented troops being spared to overawe Doondia, and the several other independent Zemindars of the ceded districts, into regular payment of their land revenue, submission and allegiance to their new Sovereign, or obedience to a novel and highly unpopular code of civil law and regulations.

Doondia, and others of his family, taking advantage of this unsettled state of affairs, busily employed themselves in strengthening their forts, while they increased their revenue, by raising contributions from those parts of the adjacent country, to which they could put up the slightest claim; readily pleading the inroads of the Mahrattah armies, and the confusion which prevailed throughout the Doab, as an excuse for proceedings, which adding to the anarchy existing throughout our newly acquired provinces, swallowed up a considerable portion of the public revenue.

Early in the month of December 1804, the Commander in Chief, General Lake, being then on his march to attack the fort of Deig, was informed by the Civil officer appointed to collect the revenue of the ceded districts, that an address had been received from Doondia Khan (then considered in open rebellion to the Revenue Authorities), and that in reply, the Collector had advised him to wait personally on the General, who possessed special powers for the settlement of the country.

The Commander in Chief, in reply to this communication, stated his belief that Doondia had been misled, and authorized a pardon to be granted to him, on condition that he should disband his armed force, pay up all balances of revenue, and discharge, by instalments, whatever should in future become due.

Doondia, as a preliminary, requested to have a pardon granted him, directly under the hand and seal of General Lake; and offered on receipt of that document, to wait upon the Collector, and to deliver up his fort. This the Collector however considered a mere subterfuge to gain time; and that officer accusing Doondia of having realized 40,000 rupees collection in Duban and Attrowlee alone, to which he had no right, suggested the propriety of his being deprived of a part of the lands he held. The Collector farther complained of the tone of equality adopted by Doondia in his correspondence: he stated that the native authorities, established on behalf of the British Government in several estates of the district, had been forcibly ejected by Doondia, and finally lamented, that the want of Military force rendered it impossible, either immediately to resent these insults, or to reinstate his revenue officers.

The deficiency of Military force within the ceded districts, and the failure of the British troops in the assaults at Bhurtpoor, encouraged several of the Zemindars of that part of the country to resist the revenue authorities. In January 1805, while General Lake was before Bhurtpoor, we find Doondia and others acting in open contempt of the Civil power, and he is particularly noticed by the Collector, as evincing an inclination to resist a detachment which was finally sent against him; but which, at this period, was employed against his paternal uncle, the Zemindar of Malanee, who, on the fall of that place, fled to Toorkee-

poora, another of his forts in Doondia Khan's neighbourhood; and in February 1805, we find both Chiefs uniting their forces, to attack Chittaree, a fort possessed by Murdhan Ally Khan, who, tho' nephew to Doondia, was noted for his attachment to the British interests.

After suffering a repulse on the 27th February at Chittaree, and again at Khier in March, Doondia, a second time offered submission to the Collector, on condition of being provided for by the British Government, and being permitted to retain the Zemindaree of Shikarpoor and Pertampoor.

In the latter end of March 1805, a communication was made to Doondia, encouraging him to wait in person on the Collector, and offering him a confirmation of his Zemindaree. But in addition to the Zemindaree, he now proposed, that he should be constituted Farmer of the Khier Pergunnah, and also of the Talook of Barowlee.

In April, the Collector encamped near Kamona, and had his first interview with Doondia, who waited upon him for the purpose of apologizing for his past conduct, and to obtain a final pardon and settlement. But as the Talook of Barowlee belonged to a person named Bodun Sing, a compliance with his request on this head was declined. The farm of the Khier Pergunnah, in addition to the Zemindaree, was, however, offered, on condition of *his destroying the bastions and filling up the ditch of his fort, and giving security for good conduct, and regular payment of future revenue.*

On the plea of the probability of future Mahrattah invasion, Doondia objected to destroy his guns and bastions, but consented to throw down his faussebraye-wall, and to disband his troops. After some discussion these terms were finally accepted, but still, on the condition of respectable security being given to the Collector for future revenue payments.

Sometime after this conference, as it was believed that Doondia found it difficult to obtain respectable native bankers as sureties, the Collector suggested, that instead of pecuniary security, he should give up one of his sons as a hostage to the British Government. But this Doondia evaded, and offered the security of native bankers for the sixth part only of the revenue of the Khier Pergunnah.

The Collector now again addressed the Commander in Chief, advising that security for the whole revenue should be the only terms offered to Doondia, who, notwithstanding pending negotiations, had lately (the Collector stated) engaged 200 Seiks in his service; and in failure of his fulfilling the terms required, the Collector recommended that a Military force should be employed to dispossess him.

The Commander in Chief, then encamped before Bhurt-poor, acquainted the Collector in reply, that a Military force could not be spared, and suggested his temporising and continuing negotiations till that could be effected. At the same time His Excellency strongly recommended an accommodation being, if possible, concluded, on the grounds of a confirmation of the Zemindaree, and the striking off all arrears of revenue still due to Government.

About the end of the month of June of the year 1805, the fort of Imlanee, belonging to Doondia's paternal uncle, having been reduced, a British detachment was sent against Kamona, and Doondia found it advisable to come to definite terms with Government.

A pardon under General Lake's Seal, for all past offences, was now offered, on his surrendering his guns, filling up his ditch, and disbanding all unnecessary troops; and on accepting these terms, the whole of the lands held previous to the war in 1803, were ordered to be confirmed to him.

At this time Doondia Khan informed the Military and Civil authorities conducting the negotiations, that he had determined to abandon all worldly concerns, and to restrict himself to a life of religious devotion. After accepting the terms offered, he therefore requested that the grants of the several Pergunnahs should be made out in the name of his eldest son Runmust Khan, to whom he resigned all his authority, and with whom all official business was subsequently transacted.

The terms offered were accepted, and the ditch near the gateway being filled up, an acknowledgment was taken by Doondia from the Commanding Officer, Colonel Richardson, that the terms had been complied with. The Military force was accordingly withdrawn, but some delay took place in furnishing the regular grants of the lands. The Collector requiring security from Runmust Khan, for the revenues of Shikarpoor and Pertampoor, previous to granting Sunnuds for Khier; and as the farm of Noh had only fallen incidentally under the direction of Doondia Khan, during the disturbed state of the country consequent to the Mahrattah war, and had not formed any part of his estate under Perron's Government, the Collector did not conceive it was comprehended in the lands intended to be delivered over.

In August 1805, by way of inspiring Runmust Khan with confidence, and inducing him to a personal meeting, the Collector sent him the Sunnuds for the Zemindaree of Shikarpoor and farm of Pertampoor, and offered to deliver those for Khier, as soon as the young Chief waited upon him. But this Runmust Khan evaded, and indeed throughout the negotiations, both the father and son considering the Dewan of the Collector as their enemy, and as having prejudiced that officer against them, evinced no desire to communicate directly with the Civil authority, and they perhaps thought, they were only maintaining the dignity

their family and assumed rank, by avoiding personal communications on such matters as could be settled with less embarrassment, through their Vackeels.

In September 1805, the Collector seems at length to have discovered that the Pergunnahs of Noh and Khier were included in the estates, which Lieutenant Colonel Richardson (who commanded the force sent against Kamona in June, and had subsequently conducted the negotiation) had promised should be delivered over to Doondia, and on the 23rd September 1805, Runmust Khan, having at last come to an interview for that purpose, the Collector delivered to him the remaining Sunnuds for Noh and Khier, in farm, on a triennial settlement.

On this occasion the Collector expected, that the usual engagements of security for the revenue of Shikarpoor and Pertampoor, would have been produced, and accordingly mentioned this to Runmust Khan, who in reply observed, that his estates were in a very uncultivated state from the interruption given to husbandry, and the desertion of his villagers during the disturbances attendant on the late Mahrattah war; that as the defalcation of revenue would consequently be great in the ensuing year, and the losses suffered required in the first instance to be ascertained by the Collector, the usual engagements would be entered into after that information had been accurately ascertained.

In the latter end of the year 1806, the *Magistrate* of the Allyghur district, after accusing Doondia Khan of having strengthened Kamona with a new outwork, by enclosing a garden (which in the attack carried on by Colonel Grueber, formed the site of the British battery), and of having procured a number of cannon, reported to Government, "that under pretence of supporting his son's authority (who was employed on the collections of the Pergunnahs of Noh), Doondia Khan had marched from Kamona

with a large armed force of horse and foot, accompanied by two pieces of ordnance, with the intention of expelling the Zemindars of the village of Musmunnah; that the Zemindars and other inhabitants of that village, aware that even the appearance of opposition would subject them to the loss of their lives and property, had, on his approach, abandoned the place, and retired beyond the river Jumna, and that the village being evacuated, a guard was placed in it by Doondia, and a salute of eleven guns fired in honor of his success.

“Although, upon receiving information of these hostile measures,” says the Magistrate, “I considered myself fully authorized to have required Doondia Khan and his son to appear in court, and answer for their conduct, yet being aware that any such demand would subject the Civil authority to insult and contempt, and eventually involve Government in an intestine contest with these Chiefs, I deemed it advisable to confine my demand to an explanation of the circumstances which had induced them to proceed in force through the country, with an intention of attacking and expelling the Zemindars in question, whom I considered entitled to the protection of Government; and I have resolved to await the instructions of the Governor General, formed upon a consideration of the circumstances of the case, and of Doondia’s letter of explanation. But I have to observe, that whatever the contents of Doondia’s letter may be, *it never can exculpate him from the crime of having assumed a legal power of redressing his own supposed injuries, by marching through the country with an armed force, for the avowed purpose of expelling the Zemindars, in which he succeeded only through the apprehension of his overgrown authority.*

The Magistrate concludes his dispatch by observing, that “upon every view of Doondia Khan’s character and conduct, and of his present power and influence, it must be

admitted that they are too great and extensive for a subject, and that perhaps it might be better to declare him wholly independant of the controul of the court of justice, than to subject the officers of Government, appointed to administer the laws and regulations, to insult and contempt, which must be the case until he is reduced to a proper state of subjection and submission."

On the 30th December 1806, the Magistrate of the district of Allyghur transmitted the following documents, relative to the affairs of Musmunnah, to Government:—

*To G. DOWDESWELL, Esq. Secretary to Government, Judicial Dept.,
Fort William.*

SIR,

"In continuation of my report respecting the violent and illegal occupation of the village of Musmunnah by Doondia Khan and his son Runmust Khan, I have the honor to transmit, for the information of the Honorable the Governor in Council, a translation of an Arzee received from the latter, in answer to my Perwannah requiring him to explain his conduct. Doondia Khan, in his reply, merely referred me to his son for the particulars of the case.

2. Although I trust my character cannot suffer from the aspersions of so notorious a rebel as Runmust Khan, still as he alleges that my total disregard to his reports and representations, compelled him to adopt such a line of conduct, justice to myself requires I should notice the charge made against me.

3. I admit that Runmust Khan reported that the Zemindars of Musmunnah were constructing a wall round their village, but not being disposed to place implicit confidence in the reports given by him, and other powerful Zemindars, against those subject to them, I refrained from adopting immediate measures against them, until I had ascertained through my own officers, what description of work the Zemindars were constructing. Before this point was ascertained to my satisfaction, Runmust Khan, whose haughty spirit and impatient temper could not brook delay, was pleased to proceed with his troops against the village.

4. Accompanying you will also receive a translation of a Rajeenamah offered to the court by Runmust Khan, and stated by him to have been voluntarily executed by the Zemindars.

5. No comment upon this paper is required from me; it is one of the most impudent productions ever attempted to be imposed upon a court of justice; but its unblushing falsehood and self-evident absurdity, defeat the purpose for which it was obtained from the Zemindars, I ought rather to say extorted, as has subsequently been declared by them on oath.

6. Independant of Doondia Khan's and his son's violent conduct on the present occasion, I have to observe that he has at least 12 persons in confinement in his fort, whom he has refused to deliver up, in consequence of their being kept as hostages for the payment of the revenue of the Pergunnah of Noh. The relations of the persons in confinement have declared on oath, that they have been confined for upwards of a twelve month, and although I have again required their release, I have no reason to hope the demand will be complied with.

7. At present Doondia Khan is busily employed in strengthening the different forts and castles in the Pergunnahs under his son's charge, and apprehensive of being chastised by Government for his improper conduct, and influenced by a determination to resist, he, two days ago, removed his family from Kamona to Gunnourie, another strong fort belonging to him, and it is understood that he intends removing them either into the Seik country, or to Begum Sumroo's Jeydad—in my opinion it is more probable they will be sent to the former for security.

8. For the rest I have only to repeat my decided opinion, that it is absolutely necessary to adopt immediate measures against Doondia Khan, and the longer they are postponed, the more difficult the service will become, as he adopts every mode of strengthening his forts, and of encreasing his means of defence."

I have the honor to be, &c.

Zillah Allyghur, } (Signed) R. CUNYNGHAME, Magistrate.
30th December, 1806. }

Translation of an Arzee, received from Runmust Khan, addressed to the Magistrate of Allyghur, being in answer to the demand of an explanation made by the Magistrate, respecting the affair of Musmunnah.

"I had the honor to receive, on the 18th Shaban, your Perwannah to the following purport: 'That I (Runmust

Khan), accompanied by some Tomans of horse and foot, had marched with an intention of attacking the village of Musmunnah, and that the Zemindars, apprehensive of the loss of their lives and property, had fled across the Jumna; that I had established a Tannah of Burkendauzes in that village, and that it was understood that I still remained with my people at Nanicpoor, which is contiguous to the above mentioned village; that such proceedings are contrary to the orders of Government; and that I must explain the circumstance, in order that the necessary measures may be taken."

"For about six weeks, the Zemindars of Musmunnah (who have long been notorious for sedition and refractory conduct) had collected eight hundred labourers, and were constructing a wall round the village. My Naib, who has charge of the Pergunnah of Noh-jheel, forbade this proceeding, but they paid no attention to him; accordingly I went with my people to Noh-jheel, and remonstrated with them: still they would not desist. From the time they commenced their work, they sent their buffaloes and property, &c. across the Jumna, and remaining themselves without their families, collected a number of turbulent persons, with the intention of creating disturbances. *I transmitted an account of this business, signed by the Zemindars of the village, attested by the Canongoes, and under the seal of the Cauzee, detailing these particulars to you, enclosed in an Arzee, through my Vakeels. Twenty days and more having elapsed, and no answer having been received, as I saw my authority in the Pergunnah daily impaired, I proceeded to Nanicpoor, one of my Tannahs, and took up my abode there, and after remaining for some time, by the blessing of God, and the good fortune of the Government, these rebels, seized with fear, evacuated the fort without resistance, and went across the Jumna. I destroyed the walls*

of the village, and the ghurry belonging to the rebels, and afterwards, by kind treatment and fair words, induced them to return, and reinstated them. After their return, they gave a Razeenamah into my office, a copy of which I sent with my Arzee, with an account of what had happened, and my Vackeel will have delivered it. Having left that place, I arrived at Noh-jheel, and on the 11th of Shaban returned to Kamona, my established place of residence. *No men in my service are in the above mentioned village as a Tannah, but the Zemindars themselves inhabit it; this I represent for your information.* It is an extraordinary circumstance that my former representation to you, with an account of the Zemindars of Musmunnah, under the signature of the Zemindars of the Pergunnah, witnessed by the Canongoes, and sealed by the Cauzee, *which was sent more than twenty days ago*, and my present Arzee, with a copy of the Razeenamah of the Zemindars, under the seal of the Cauzee, which was also sent, either do not reach you, or you do not hear them. *If they do reach you, I do not receive an answer to any one of my representations*, and in any business against me, whoever says any thing, whether true or false, is believed. In this case how can I go on? I beg you may ascertain about the turbulent and refractory spirit of the people in the Pergunnah of Noh-jheel. Soon after the establishment of the English Government in this country, the Zemindars of that Pergunnah drove the former Aumil from the Tannah, and having destroyed it, carried off the beams and other wood of his residence, to their own houses. In consequence of the refractory conduct of the above mentioned Zemindars, Mr. Claud Russel, Collector, &c. gave the Pergunnah of Noh-jheel in charge to me, and I have incurred a heavy expence in introducing good order into the Pergunnah, and in collecting the revenues of Government: at present, in consequence

quence of the refractory conduct of the Zemindars, the expence of Sebundy for the Pergunnah is very great, and I am under the necessity of employing a great number of men, without which the Aumil could not remain. The people of the Pergunnah are known of old to be rebellious and turbulent. To such enormous expence have I submitted, in order to keep the Pergunnah in proper order, that I am in consequence unable to pay regularly the revenue into the treasury of Government. But without regarding either my good conduct or worth, I have, through a tissue of false testimony from designing men, become the object of your displeasure—my understanding is in consequence quite bewildered.”

The following is a translation of the Razeenamah, stated by Runmust Khan to have been written by the Zemindars of Musmunnah, under the signatures of the Zemindars of that place, the testimony of the respectable inhabitants (arbitrators) of the Pergunnah, and under the seal of the Cauzee :—

“Whereas we, Judermun, Ramdololl, Bejay Singh, Rutty, Booddah, Odowlah, Sookha, and Torawur, Zemindars of Mousa Musmunnah, being apprehensive of the consequence of our wicked conduct, arising from our being night and day engaged in theft and robbery, and sensible of our fault in having constructed a fortified wall; in consequence of the refractory conduct in the payment of our revenue, fled from the above-mentioned village.”

“As Koer Runmust Khan Saheb, &c. &c. is always intent on giving protection and assisting the poor, he did not molest our property, but behaved to us with great kindness, and giving us a flag of reinstatement, inspiring us with confidence and loading us with favors, he has again settled us in the village. Although during the time that Koer Saheb has been Aumil, various crimes have been

committed by us, yet we have at all times experienced his favor and protection, and our crimes have been passed over. There has been no damage done to the above mentioned village, neither to our property, arms, or to the cultivation, and if any person declares or says that any injury has been sustained, such a story is entirely false. We have written this Razecnamah, that it may be produced in future as a document."

Dated on the 14th of Shaban.

True translation,

(Signed) E. GARDINER, *Assistant.*

The Government on perusing these documents, did not deem it advisable to order out a Military force, but acquainted the Magistrate, that if Doondia or his son persisted in their refractory and unwarrantable conduct, the same was to be reported, and towards the close of the ensuing rainy season, the expediency of proceeding to the reduction of their forts would be taken into consideration. In the mean time the Magistrate was directed to keep Government apprized of any further acts of misconduct, of which they might be guilty.

The *Collector* of the district, soon after this, called upon Runmust Khan to enter into security for the payment of revenue likely to become due on account of his estates and farms, during the two approaching years of the triennial settlement, and on this occasion Runmust Khan required a remission to be made in his favor equal to 22,000 rupees for the past year, and 30,000 rupees for the two ensuing years.

On a reference being made on this subject to Government, a deduction of 22,000 rupees on the first year's Jumma was allowed, on account of the damage sustained during the troubles incident to the Mahrattah war. But as the conditions of pardon granted to Runmust Khan, spe

cified that satisfactory security for future revenue was to be given, and for the first year security for Koer only had been obtained; while for the ensuing years, notwithstanding his having delivered a written promise to the Collector, to produce the required security within a specified period, all demands for it had been evaded, without any satisfactory plea being set up for further deductions. Government saw no reason to grant what was considered an extravagant demand for Sebundy expences. At the same time, all compulsory measures to enforce the demands for security were peremptorily interdicted, without the sanction of Government being previously obtained.

In the middle of the year 1807, the following correspondence took place:—

*To G. DOWDESWELL, Esq. Secretary to Government,
Judicial Department.*

SIR,

“I have the honor to transmit for the information of the Honorable the Governor General in Council, the copy of a letter to my address from his agent at Bareilly, together with the copy of my reply to the same.

Since writing the above reply to Mr. Crisp, my Hurkarrahs confirm the opinion stated by me, that Doondia Khan is in a complete state of preparation for resisting such demands as Government may make upon him, as well for the demolition of his forts, and disbanding his troops, as for the liquidation of the balance of revenue, which he withholds under extravagant and unjust pretences. Still however I feel disposed to believe, he will not become rebellious, for it is for his own advantage not to be the first to commence offensive operations, but to remain on the defensive.

It is every way desirable that extensive military operations should, if possible, be avoided at this season of the year; but should rebellion actually break out, the Honorable the Governor General may rely on my best exertions for suppressing it.

Conceiving that the Honorable the Governor General, upon a consideration of the overgrown powers possessed by this refractory

Talookdar, and of the complete preparation he has already made for resisting the just demands which he expects will be made upon him by Government, will be convinced of the absolute necessity of reducing him when the rainy season has broken up. I shall in a few days take the liberty to transmit a report through you, containing a statement of those points, with which I conceive immediate compliance ought to be required, and which if rejected, ought to be followed by immediate and exemplary punishment. I beg leave also to add, that in the event of the Honorable the Governor General hereafter sanctioning military operations against the Chieftain, the demand alluded to ought not to be made until the force detached shall have taken up a position, so as to afford some hope of overawing him."

I have the honor to be, &c.

Coel, 15th June, 1807. (Signed) R. CUNYNGHAME, *Magistrate.*

The following letter is in reply to the above:—

To the Magistrate of Allyghur.

SIR,

"I am directed to acknowledge the receipt of a letter from you, dated the 15th ultimo, and to acquaint you that the Honorable the Governor General in Council, desires that you will continue to keep him regularly informed of every thing which may appear of importance in the conduct of Doondia Khan; but that you will be careful not to adopt any measures which may excite him to open resistance to the authority of Government."

Council Chamber,) (Signed) G. DOWDESWELL,
Fort William, 2nd July, 1807.) *Secy. to Govt.*

The following is the Governor General's Agent's communication, and its reply, alluded to by the Allyghur Magistrate, in his letter of the 15th June, addressed to Government:

To Rt. CUNYNGHAME, Esq. Magistrate of Zillah Allyghur.

Governor General's Agent's Office, Ceded Provinces.]

SIR,

"I have received intimation that a large force is assembled under Doondia Khan in a state of rebellion in your Zillah.

2. Allow me to request that you will inform me, as soon as possible, what the circumstances of the case are, and if any, and what steps have been taken to suppress the insurgents."

I have, &c.

Bareilly, }
the 8th June, 1807. }

(Signed) B. CRISP, *Agent to the Governor General.*

To B. CRISP, Esq. Agent to the Hon'ble the Governor General, Bareilly.

SIR,

"I hasten to acknowledge the receipt of your letter of the 8th instant, which reached me this morning, and to acquaint you that I have no reason to believe that a large force (I ought rather to say, a force larger than he always keeps up) is assembled under Doondia Khan, in a state of rebellion, in my district.

2. It is notorious that Doondia Khan possesses a strong fort, and keeps up a large military establishment, with guns attached to it, notwithstanding he agreed, when pardon was granted him by the Right Honorable Lord Lake, to refrain from strengthening his fort, and to disband his troops.

3. Unfortunately no copy of the engagement entered into by Doondia Khan with Colonel Richardson, at the time of receiving a pardon, is to be found among the records of this or the Collector's office; but I have every reason to believe that he was bound by that treaty to disband his troops, and not to strengthen his forts, and under that conviction, I reported to the Honorable the Governor General in Council, that these conditions had not been performed.

4. If the opinion entertained by me, respecting the conditions under which the pardon was granted, had been erroneous, Government would have set me right, as I must presume, that Colonel Richardson (Military Secretary to the Honorable the Governor General) by whom the treaty was conducted, must have been consulted on the subject of my report.

5. I must be permitted to observe, that the intimation given to you, contains an exaggerated account of Doondia Khan's conduct, for although he is not under a proper degree of submission and controul, I cannot for a moment admit that he is in a state of rebellion.

6. That Doondia Khan is prepared to resist the demands which will probably be made upon him after the rains, there is no doubt; and that the same line of resistance, and active opposition will be pur-

sued under similar circumstances by every powerful Zemindar in this district possessing strong forts, is equally notorious; but I do not think Doondia Khan so weak as to commit the first act of hostility, or first to perpetrate any overt acts of rebellion, before the demands alluded to, are actually made upon him.

7. I am inclined to believe, that whoever conveyed to you the intelligence contained in your letter, must possess very slight knowledge of a correspondence which has passed between Government and me, respecting Doondia Khan's improper conduct last October, and that he has converted that subject into exaggerated misrepresentation, that Doondia Khan is in open rebellion. If such be the case, I consider myself as extremely unfortunate, as I took every precaution to keep the correspondence secret, by copying the letters either with my own hands, or under my assistants, and by not yet entering them in the public records.

8. For your information, I have the honor to transmit copies of that correspondence, and I am disposed to hope you will observe with satisfaction, the cautious conduct adopted on that occasion, and the anxious wish I have shewn to avoid, if possible, disturbing the tranquillity of the district.

9. No blame can attach to me, because Doondia Khan is not under a proper degree of submission to the Civil authority. I reported, as was my duty, the whole of his conduct to Government, and suggested in the strongest terms the expediency of reducing his overgrown power, and of severely punishing him, and I conclude the Governor General in Council was influenced by particular reasons in delaying to adopt the measures suggested by me, until after the ensuing rains.

10. Having privately and confidentially communicated to the Collector the subject of your letter, with the view of obtaining from him any information which he might possess respecting Doondia Khan's present conduct, I have the honor to transmit a transcript of his reply, and copy of a Persian Arzee, which accompanied it.

11. The terms in which that paper is drawn up are certainly those of defiance; but both Mr. Russell (the Collector) and I have long been aware, that the points in dispute between the Collector and Doondia Khan and his son Runmust Khan (in whose name all the lands are now held), would never be amicably settled, and that an adjustment can only be obtained at the point of the bayonet.

12. Beyond doubt the intimation lately made by the Collector to Runmust Khan (Doondia Khan's son), of the rejection by Government

of his extravagant demands, has excited in the minds of both a greater degree of apprehension and alarm than before existed, and as they must expect that their violent conduct towards the Zemindars of Musmunnah, will ere long draw upon them the punishment they deserve, and that Government will at last be compelled to enforce payment of the revenues which are withheld, it may be inferred that these combined circumstances have caused a stronger appearance of preparation for resistance and opposition. This inference gives a greater degree of credit to the intimation you have received, altho' I must observe that they have been long fully prepared, and that I have not heard of their having lately made any fresh levies.

13. I am fully aware that they are in the custom of holding language extremely hostile, and that they have expressed themselves in their Durbar with the most bitter asperity towards every Civil authority in this district. When the period shall arrive for commencing active operations against these rebellious Chieftains, I apprise you that it will be absolutely necessary to adopt measures of precaution, by increasing the force at Coel, for the security of the public treasury, and, I may add, for the protection of the lives of the Civil officers of Government: the fort of Kamona being only sixteen miles from Coel, and the character of Doondia Khan and Runmust Khan being such, that there is no desperate or atrocious act which they would not commit. It will be my duty to adopt the necessary measures at the proper season, for maintaining, as far as may be practicable, tranquillity throughout the other forts of the district, by confining the military operations to the siege of Kamona, and upon this subject I shall have the honor to correspond with you, and the Commanding Officer in the field.

14. Although I am not disposed to believe that Doondia Khan will commit any positive act of rebellion, still deeming it proper not to disregard the intimation you have received, I shall keep a watchful eye over his conduct, and, with a view to obtain regular information, I have this day employed Hurcarrabs, a measure which I have no doubt the Governor General will sanction.

15. I place so high a value on your good opinion, that I have observed with regret, that in the last paragraph of your letter, you doubt my strenuous exertions in the suppression of rebellion. Allow me, Sir, to assure you, that the Magistrate of Allyghur, who has been most actively employed for nearly six years in the conquered and ceded provinces, and in times of difficulty and danger, will never

shrink from the performance of the duty committed to his charge; and that the public officer of Government, who, when Collector of Mynpooree, punished the powerful and refractory Rajah of Sarsnee and Bidgeeghur, is equally prepared and ready to inflict punishment on Doondia Khan, when circumstances will admit of it.

16. I again repeat that I do not expect that Doondia Khan will become in a state of actual rebellion; but you may be assured, that should circumstances occur to induce the belief that such is his intention, previous to any demands being made upon him, I will anticipate him, by having recourse to military operations against his fort; and should, contrary to my present opinion, a rebellion suddenly occur, my most strenuous exertions shall be immediately used for its suppression.

17. I beg leave to add, that I have deemed it my duty to transmit to Mr. Secretary Dowdeswell, for the information of Government, a copy of your letter and my reply, and although I still consider the intimation given to you, to be exaggerated, I shall address Major General Dickens, commanding in the field, on the subject, with a view to apprise him, that it is possible a strong military detachment will be required.

18. For the rest, I have only to request, that you will be pleased to communicate to me any information you may receive, regarding Doondia Khan and his son Runmust Khan, and I shall take particular care to keep you regularly apprised of their conduct by transmitting the intelligence which I shall procure."

I have the honor to be, &c.

Col,) (Signed) R. CUNYNGHAME, *Magistrate.*
13th June, 1807.)

While the Judicial officer at Coel was accusing Doondia Khan and his son of usurping undue authority against the village of Musmunnah, the Collector about the same time addressed the following report to the Revenue Board:—

To R. THACKERY, Esq. Secy. to the Board of Revenue, Fort William.

SIR,

"Having communicated to Runmust Khan the resolution of Government, conveyed to me in your letter of the 10th March, and having at the same time proposed to him to enter into engagements for the

lands of Pertampoor and Shikarpoor, upon equitable terms; he has addressed to me an Arzee in answer, of which I beg leave to transmit the accompanying copy and translation, for the information of the Board. From the tenor of the Arzee, I am reluctantly compelled to observe to the Board, that Runmust Khan persists in rejecting any settlement of these Pergunnahs, excepting upon the terms communicated in my letter of the 7th February last. It is expressed in terms which leaves no reasonable ground of hope, that he will conclude a satisfactory adjustment, or that any advantage can result from pressing the question. These considerations operate upon my mind to preclude any further correspondence with him on the subject for the present; but I shall be disposed at any time to conclude a conditional arrangement with him, if he should (contrary to my expectations) offer any terms of settlement, consistent with his duty and the interests of Government.

There is one point in his representation, upon which I take the liberty to remark:—Runmust Khan insinuates that I had proposed to him certain specific terms of settlement, and that he had consented to give an encrease of two annas upon his payments of the past year, merely in conformity to my wishes, as if the encrease had formed the ultimatum in the settlement. I shall only observe, that my demands of settlement were formed upon general principles, and in my proceedings, a copy of which I gave to his Vackeel at his particular desire, I called upon him to conclude his engagements with Government, according to the Jumna of 1211 Fusilec."

I have the honor to be, &c.

Coel,)
18th June, 1807. }

(Signed) C. RUSSEL, Collector.

Translation of an Arzee from Runmust Khan to the Collector of Allyghar, and presented the 13th June, 1807.

"I have had the honor to receive your Perwannah upon the subject of the settlement of the Pergunnah of Shikarpoor, and of the half share of Pertampoor. The case is this:—You before sent my Vackeel to me, with your proceedings relative to the terms of settlement, for the purpose of concluding the settlement of those lands; when, with a view to evince my obedience, I consented, conformably

to your pleasure, to give two annas increase upon the Jumna of 1213, which was settled according to the produce, as ascertained by the Aumeen of Government, for the years 1214 and 1215 Fusilee. It is strange that this should not have been approved by the Board, as the Aumeen had ocular demonstration, and fixed the assessment agreeably to the produce, and as I agreed for the years above mentioned to give an increase of two annas upon each year, what further additional means of assessment can remain? I have concealed nothing in the transaction; I shewed your Aumeen the actual produce, and upon that produce, in order to promote your satisfaction, I consented to pay an increase of two annas upon each year; consequently, upon what grounds do you demand an increase? and in what manner can it be realized? Besides me, there are many other land proprietors under Government, and among them all, who has consented, like me, to an increase upon the produce? Justice from our superiors is necessary. I have no occupation but that of a proprietor under Government, and my welfare depends entirely upon your favor."

(A true translation)

(Signed) C. RUSSELL, *Collector.*

On the 14th of August 1807, Government having taken into consideration the several previous proceedings relative to the conduct of Doondia Khan, the conquest of the province of Allyghur by the British, the pardon granted to Doondia under the authority of Lord Lake, and the recent acts committed by that Zemindar, observed, 1st, " that Doondia Khan, at a very early period after the conquest of the district of Allyghur, had evinced the most marked disaffection to the British Government, and had actually opposed the establishment of its authority by force of arms."

"2ndly. That these offences on the part of Doondia Khan, would have fully warranted the confiscation of his estates and farms, and the infliction of exemplary punishment on the person of the offender."

"3rdly. That Doondia Khan, far from manifesting a due sense of the signal benefit which he had experienced from Government, and entirely regardless of the conditions on which pardon had been granted him by Lord Lake, had lately been guilty of most lawless acts of violence towards the inhabitants of the village of Musmunnah, and was in the constant habit of resisting the legal authority of the Judge and Magistrate."

"4thly. That Doondia Khan is now strengthening the works of his forts, and adopting such other measures as he conceives may better enable him to resist the authority of Government."

"5thly. That although Doondia Khan had not entered into any engagement for the payment of the revenue of the estate held by him, he still retains possession of these lands, and contumaciously withholds payment of large sums on account of revenue due from them to Government."

Under all these circumstances, the Governor General in Council "resolved, that measures should be adopted for the reduction of his forts, and the apprehension of his person, in order that the authority of Government might be fully established in the district of Allyghur, the public revenue received, and Doondia Khan with his adherents brought to trial, before the Criminal Courts of Jurisdiction, for the offences with which he stood charged."

It was therefore ordered, "that the Provincial Commander in Chief be requested to instruct the officer commanding the troops in the upper provinces, to order a force to proceed in support of the authority of the Judge and Magistrate against Doondia Khan; but not to act against

that person until the officer commanding the force be duly apprised by the Judge and Magistrate, that all the forms prescribed by the regulations have been observed, and reports that Doondia Khan having failed to comply with the requisitions made for his attendance, no alternative remains but the employment of a military force for the apprehension of his person and the reduction of his forts."

It was also ordered, "that the foregoing orders be communicated to the Acting Magistrate of Allyghur, and that the Acting Magistrate at the same time be informed, that the Governor General in Council desires that he re-issue his warrant for the apprehension of Doondia Khan, to answer to the charges and complaints preferred against him, and in case of further resistance (on the part of Doondia Khan) to the Magistrate's process, that the rules prescribed in the regulations be strictly conformed to, and finally, in the event of those measures failing to produce the effect desired, the Magistrate be directed to inform the officer commanding the force, of the continued contumacy and disobedience of Doondia Khan, in order that that officer might proceed against the offender."

It was likewise directed, "that the officer commanding the forces in the upper provinces, should communicate with the Acting Magistrate of Allyghur, respecting the period of time at which it might appear advisable that the force should proceed on the above mentioned service, and on any other points on which General Dickens might be of opinion that he could be furnished with any useful information by the Acting Magistrate."

The following is a copy of a letter from the Magistrate of the District to General Dickens, who commanded the army in the field:---

SIR,

I have this morning been honored with the receipt of the final instructions of Government respecting Doondia Khan, and his son Runmust Khan, and the reduction of their forts, which information you have undoubtedly received. *

2. I shall most readily, and with the greatest pleasure, at all times afford you every information in my power.

3. Previously to active operations against the forts of these rebellious Zemindars, I am directed to go through all the forms prescribed by the civil regulations of Government, and this will necessarily occupy a period of 5 weeks, but as the steps I must take will clearly evince the intentions of Government, I beg leave to submit to your judgment, whether it will be prudent to issue my order, until a military force is present in the district, sufficient to preserve the temporary peace of the country; as after he is aware that he will be attacked in the event of his not coming in (which he will never do till the last necessity—at least that is my opinion), I should be very apprehensive of his fomenting disturbances and infesting the country with marauders and plunderers; on this subject, however, I shall add no more, until I am honored with your sentiments.

4. In the fort of Kamona I am told there are 12 guns mounted.* This I have every reason to believe is the fact, but on this subject I hope in a few days to be able to give you correct information, as also respecting his fort of Gunnourie.

5. I am sure you will lament with me, that Government do not conceive it would be regular or proper in this instance, to dispense with the forms of Civil law, which order and direct that if any one refuses to obey the summons of the courts, a proclamation is to be issued for a time not less than one month, until the expiration of which time, *no further process is to be issued against him*. That you may see how particular Government is upon this head, I have the honor to enclose my instructions, which, after perusal, I will thank you to return.

6. This period I fear will be too surely employed by him in strengthening his forts, in every possible way, and may considerably increase the difficulty of taking them.

3rd Sept. 1807. (Signed) W. SPEDDING, Actg. Magistrate.

* Only 6 guns were found in the fort after the enemy left it.

On the 5th September 1807, Major General Dickens, then at Secundra near Agra, determined to prepare a force of $2\frac{1}{2}$ squadrons of native cavalry, and 2 battalions of native infantry, to be sent to Coel, the head quarters of the Allyghur district, to repress any sudden disturbances raised by Doondia Khan, and the same day orders were dispatched to Agra to prepare some battering ordnance.

On this day the Magistrate of Coel Allyghur, obtained the following intelligence from his Hurcarrahs:—

INFORMATION RESPECTING DOONDIA KHAN'S FORT
OF GUNNOURIE.

*The declaration on oath of Ramsingh and Kishore
Hurcarrahs.*

Saturday, the 5th September.—The fort of Gunnourie, belonging to Doondia Khan, is north-west of Coel, distant about 19 coss, and is about 6 coss from Kamona. It is surrounded by a marsh, which is at present dry; but in the rains has generally much water in it. The fort is even with the plain, and is hardly to be distinguished at any distance. It occupies about 11 beegahs of ground, and is surrounded by a ditch about 20 feet broad and 26 feet deep†; but there are at present about 80 bildars employed in cleaning and deepening it, and repairing the rownee (faussebraye) with the earth that is thrown out of it. The height of the rownee-wall is about 6 feet, and is about $10\frac{1}{2}$ feet broad, so that guns may run upon it; the loopholes for musquetry are about $1\frac{1}{2}$ feet from each other.

On the eastward there is a bamboo wicket in the rownee,

* Contrary to the common construction of mud forts, the ramparts of Doondia's fortifications were low and well covered by the glacis.

† The ditch was finally found to be about 24 feet broad at bottom, and 39 feet broad at top.

and the distance between the rownee and the curtain (rampart of the fort), is about 15 feet more or less.*

The fort is more in the form of a triangle than a square: there are 8 bastions, and the curtains are about 18 feet high, the gateway is flanked by 3 bastions.

Within the fort there are two enclosures; in the greater is a Zenana; it has two gates to the eastward, the one covered the other a wicket; in the second enclosure are the lines of the troops, who at present amount to 100 foot and 25 horse. There are two guns mounted on the two easterly bastions, which can be seen from without the fort.† On the south-west bastion is a bungalow.

The ditch is at present dry; but from digging about 3 feet deeper, they will find water.

On the outside of the fort, about 26 paces to the north of the gate, is a pukka (brick burnt) wall, with some trees, and two shops belonging to Doondia Khan.

The village of Gunnourie (consisting of about 20 houses) is about a gun-shot distant. It is nearly surrounded with jungle.

The village of Jellalpore is about 1 coss to the eastward of the fort.

INFORMATION RESPECTING DOONDIA KHAN'S FORT OF ANOWNA.

The declaration on oath of Ramsingh and Kishore Mfurcurrahs.

Saturday, 5th September.—The Gurree of Anowna is to the west of Kamona, 5 coss on the road to Gunnourie, from

* The space between the faussebraye and rampart of the town was 29 feet.

† Five guns were found in the Fort on its being deserted by the enemy.

which it is about 4 coss, and near to the Fiale Nuddee. This Gurree has been and is now repairing, the curtains are about 9 feet broad and about 15 feet high from the foundation. The rownee and ditch are completed to the westward.

The gateway is to the east. There are 3 bastions to the eastward; two at each corner of the face and one at the gateway; with the same number to the westward, and in the middle of the southern face, there is one bastion, in all seven.

Within the Gurree there is another square with 4 bastions, the gate of which is to the west. The Kalce Nuddee is about a mile to the south.

There are 50 people employed by Doondia Khan in repairing this place.

True translation,

5th September, 1807.

E. GARDINER, *Asst. Magt.*

6th September.—Five half-squadrons of native cavalry and two battalions of native infantry were ready to move on the shortest notice, and 5 companies of the 1st battalion 23rd native infantry, composing part of this force, were ordered to Coel, the head quarters of the Allyghur district.

On this day the Magistrate obtained the following intelligence from his Hurcarrals regarding the fort of Kamona:—

The declaration of Ramsingh, Kishoresingh and Rambul Hurcarrals on oath.

6th September.—The fort of Kamona, belonging to Doondia Khan, is north of the town of Coel, and distant from it 11 coss. The village of Kamona is about a gun-shot distance from it to the south. The fort is surrounded by a ditch

about 30 feet broad and 24 feet deep* (except at the gateways), which is at present dry; but which may be filled with rain. The rownee-wall, which surrounds the place, is about 6 feet high on the inside; but appears on the outside only 2 feet. The form of the fort approaches to a circle; but is far from being correctly circular. The gateway which is to the eastward, is built of masonry, and has two bastions of masonry (rather small ones) on each side of it, on both of which there is a gun mounted. The curtains on the eastern face are about 18 feet high. There are 2 bastions to the northward, and the curtains are about the height of 6 feet. To the westward is a large bastion, on which are mounted 2 guns. On this face the height of the curtain is rather more than 6 feet. To the northward there is a bastion, and also one to the south-west, with a gun mounted. On this face the height of the curtain is about 15 feet. The bastions have all been lately repaired. Within the fort is a square of 4 bastions, the gate of which is to the eastward, and it is understood that there are 4 guns in it. The height of the wall of this place is about 22 feet. To the southward of it is a granary, and near the gate is a musjid (mosque), and Doondia Khan's cutchery. On the outside of the fort, to the southward, are sheds for cattle, grass, wood, &c. Within gun-shot of the fort to the eastward (and opposite to the gateway), is a garden, which has lately been fortified, and has a ditch round it, which is at present about 9 feet wide, though Doondia Khan is still continuing to widen and deepen it.† The gate of the garden is to the westward.

* The ditch was finally found, by measurement, to be from 24 to 32 feet broad at bottom, and from 41 to 54 feet broad at top, or from the crest of the glacis to the top of the escarp of the faussebraye, and 21 feet deep to the bottom of the escarp.

† It was found to be 10 feet wide at bottom and 23 feet wide at top.

Three bastions are already completed, but the fourth to the south-west is not yet finished. Within this garden to the northward are the lines of his troops, and on the south side are the lines of his nujeehs. There is also a pukka bungalow to the southward under the bastion. Without the ditch to the eastward is a newly made garden, with mangoe trees, &c. &c. surrounded by a small ditch with a babool hedge.

True Extract,

(Signed) E. GARDINER,

6th Sept. 1807.

Assistant Magistrate

11th September.—A depôt of grain was ordered to be collected at Muttra.

Major General Dickens this day addressed the following letter to the Adjutant General of the Army :

Muttra, 11th September, 1807.

SIR,

I beg leave to state to you, for the information of the Provincial Commander in Chief, that on my return from Secundra to this place I found Mr. Spedding, Acting Magistrate of Allyghur, and have consulted with him respecting the forts possessed by Doondia Khan.

He seems to be decidedly of opinion that there is not the smallest probability of Doondia Khan's obeying the summons which has been sent him; consequently it becomes my duty to have in readiness a force (in obedience to the orders of the Right Honorable the Governor General), for the purpose of reducing his forts so soon as the period prescribed in the proclamation against him shall expire. The first preparation which I deem to be indispensibly necessary, is the providing a depôt of grain for the force to be employed, sufficient for at least one month's consumption, and to effect this object, I have directed Lieutenant Arnold, the Paymaster here, to act as Commissary of Supplies. He proceeds to-morrow to Coel for the purpose of consulting with Mr. Russell, the Collector.

Under present circumstances, I cannot immediately decide upon the exact corps to be employed; but I shall be able to send you a

detail of the whole in a few days. I shall be most anxious for the arrival of H. M.'s 17th foot.

I have, &c.

(Signed) R. M. DICKENS, *Major Genl.*
Comdg. Field Army.

The following correspondence now took place :

To GEORGE DOWDESWELL, *Esq. Secretary to Government,*
Judicial Department.

SIR,

I have had the honor to receive your letter of the 14th ultimo, with the orders of the Right Honorable the Governor General in Council, respecting Doondia Khan, which shall be strictly obeyed. The summons has been issued, to which he has replied, that he looks upon himself as having adhered to every injunction of Lord Lake. The proclamation is issued to-day.

I find it necessary however to explain, what I fear has not been perfectly understood by the right honorable the Governor General in Council, that in addition to Kamona, Doondia Khan possesses the fort of Gunnourie, which is situated in a low plain nearly surrounded with a marsh, which is now become almost dry, the walls are represented to be very strong, and the ditch about 14 feet broad, and 18 feet deep,* it is said to cover about 14 beegahs (pucka) of land; there are but three guns mounted on it. The principal Zenana is said to be here; he has also a third Ghurrie (small fort) called Anowna, which has a good wall and ditch; but it is small, and there are no guns in it.

My illness, which has but just left me convalescent, is my only excuse for omitting to mention these two places, in my public address to you of the 27th ultimo.

I have also to mention another circumstance. In the resolutions of the Right Honorable the Governor General in Council, Doondia Khan is alone alluded to, whereas in the terms of pardon, one condition proposed by himself was, that he should make over his property to his eldest son Runmust Khan, and that he himself should be allowed to make a pilgrimage to Mecca. The transfer of the property

* The ditch was found to be 24 feet broad at bottom and 38 at top.

took place, and although it appears never to have been his intention to have undertaken this pilgrimage, yet from that time Runmust Khan has appeared nominally as the head of the family, every thing has been transacted in his name; he was also present, and actually engaged in the outrages of Musmunnah, and all the replies to the Magistrate's Perwannahs (*orders*) were under his seal, therefore I have included his name in both the summons and proclamation.

I have scarcely a hope that these men will deliver themselves up; the crimes they have committed would probably occasion the forfeiture of their lives, and the period given in the proclamation, will, I fear, be solely employed in strengthening Kamona in every possible way, so as to oppose to the utmost our endeavours to take that place.

I have, &c.

Zilloh Allyghur, } (Signed) W. SPEDDING, *Acting Magistrate.*
12th Sept. 1807. }

To the Acting Magistrate of Allyghur.

Criminal, the 25th September.]

1. I am directed by the Right Honorable the Governor General in Council to acknowledge the receipt of a letter from you, dated the 12th instant, and to acquaint you that you are of course to conform to the instructions with which you were furnished on the 16th inst. respecting Doondia Khan and his adherents.

2. The orders which have been issued on that subject, are to be considered applicable to all the forts belonging to Doondia Khan, as well as to that of Kamona.

3. Every exertion is to be made for the apprehension of Runmust Khan, the son of Doondia Khan.

4 The Board of Revenue has been directed to instruct the Collector to take charge of the estates and farms of Doondia Khan, and to collect the revenue and rents on account of Government, should he omit to discharge the arrears due from him, and to conform to the other requisitions which you were directed to make to him on the above date. You will accordingly communicate to the Collector the result of these requisitions, with any further particulars which you may deem necessary for his information.

I am, &c.

(Signed)

G. D.

12th September.—2 Companies of H. M.'s 17th regiment of foot, were ordered from Cawnpore to Muttra.

Major General Dickens, this day addressed the following letter to the Adjutant General:—

Muttra, 12th September, 1807.

SIR,

I am to request that you will be pleased to acquaint the Provincial Commander in Chief, that I have, this morning learnt from Mr. Spedding, that Doondia Khan's answer to the summons has been received.

In his reply he dwells much upon the indignity of being summoned, and of his having complied with the conditions of the pardon granted to him by the Right Honorable Lord Lake; but intimates no intention whatever of coming in.

The proclamation has been issued in consequence, and the term of his appearance will expire on the 12th of October.

In my letter of yesterday's date, I mentioned my intention of making a depot of grain at Allyghur; the greatest difficulty I find will be to avoid interfering with the General Relief, which is to take place about the time that this force will be wanted; however, as the object of reducing Doondia Khan is, I presume, of the first consideration, I can only attend to my arrangements to that object, at the same time adopting them in such a manner, as may the least interfere with the intended stations of the troops after this service has been effected.

I have, &c.

(Signed) R. M. DICKENS.

To the Adjutant General of the Army.

Muttra, 12th September, 1807.

SIR,

I have the honor to report to you, for the information of the Provincial Commander in Chief, that in consequence of a communication with Mr. Spedding, from which I have no reason to hope that the force ordered by Government for the reduction of the forts belonging to Doondia Khan in the Doab, can be dispensed with, owing to the submission of that Zemindar. I have this day sent orders to

Colonel Wood, commanding at Cawnpore, to detach two companies of H. M.'s 17th foot from that station to Muttra, as I reported to you in a former letter from Secundra, was my intention.

I remain, &c.

(Signed) • R. M. DICKENS.

*To GEORGE DOWDESWELL, Esq. Secretary to Government,
Judicial Department.*

SIR,

I this morning received accounts from Kamona and its neighbourhood, so very important, as to call for the immediate transmission of the substance of them for the information of the Right Honorable the Governor General in Council.

2. In my former letter of the 12th instant, I had the honor to inform you of the reply of Doondia Khan and Runmust Khan to my summons for their attendance. To the proclamation which was issued on the 12th they have sent no reply.

2. From all the information, however, which I have been able to obtain, and to which I attach a great degree of truth, it appears that Doondia Khan and Runmust Khan lost no time in giving orders for laying in a stock of provisions, for the manufacture of gunpowder, and for the employment of all the labourers they could procure in widening and deepening the ditch of Kamona, and strengthening the walls and bastions. All this however I expected, and I should not have thought it necessary to trouble the Right Honorable the Governor General in Council again on the subject, had these men confined themselves to the above objects.

4. A report, however, which I this morning received from the Darogah of Shikarpoor, places their conduct in a very different light, for instead of obedience to the orders issued to them, they have commenced a repetition of outrages, which if not timely checked will, I fear, throw the whole country into confusion. Runmust Khan, it would appear from the above report, detached a number of his followers into the town of Shikarpoor, who regardless of the opposition of the Darogah, and other Police officers, plundered the town, seized a number of the inhabitants, sent them into the fort of Gunnourie, and perpetrated every kind of violence.

5. The alarm has been such that the people are reported as either flying their dwellings or soliciting the protection of these men.

6. Accounts also state that Doondia Khan and his son have addressed letters to Meer Khan, to the Rajahs of Jeypore and Bhurtpoor, and to the Seik Chiefs, to solicit their protection and assistance.

7. As yet the people have not come in to attest the truth of the plunder of Shikarpoor; but if it appears by the depositions of eye-witnesses in the same light as from the report of the Darogah, I shall consider it my duty to suggest to General Dickens the propriety of attacking Doondia Khan and his adherents at the earliest practicable period. In thus deviating from the orders I have received, I beg leave to observe, that I feel myself in an extremely delicate situation. By waiting till the period of the proclamation has expired, I should greatly apprehend that in addition to a large defalcation, serious disturbances must ensue, which would be extremely difficult to quell, and I trust that the Right Honorable the Governor General in Council will conceive that no further lenity should be shewn to men who have repeated such crimes, and have treated the orders of Government with such glaring contempt.

In concluding this letter, I beg leave to express my hopes that the Right Honorable the Governor General in Council will be convinced, that I have formed my determination after the most mature deliberation I can give the subject, and I am sanguine under all the circumstances of the case, that my conduct may be approved, which will afford me the greatest satisfaction.

I have the honor to be, &c.

Zillah Allyghur, }
15th Sept. 1807. }

(Signed) W. SPEDDING, Act. Magt.

To the Acting Magistrate of Allyghur.

Criminal, the 28th Sept.]

I am directed to acknowledge the receipt of your letter of the 15th instant, and to acquaint you that the Right Honorable the Governor General in Council approved the application proposed by you to be made to Major General Dickens, with a view to the protection of the country from the further depredations of Doondia Khan and his adherents.

I am, &c.

(Signed) G. D. Secy. to Gort.

To the Acting Magistrate of Allyghur.

Criminal, 16th Sept. 1807.]

On the 14th ultimo you were informed of the orders passed by Government, with a view to the suppression of the disturbances excited by Doondia Khan, and to the apprehension and punishment of that person for the offences committed by him.

2. The Governor General in Council being of opinion, on reverting to those orders, that the rules contained in section IV. regulation III. 1304, cannot properly be considered applicable to a person in open resistance to the authority of Government, and who must have already received repeated summonses for his attendance, desires that you will conform to the following instructions, instead of those contained in the 8th and 9th paragraphs of the resolutions of Government of the above date.

3. You are required to issue your warrant to Doondia Khan, requiring, 1st, that he will immediately discharge the arrears of revenue due by him, (the amount of which you will of course ascertain with as much precision as the nature of the case will admit from the Collector); 2dly, that he will consent to the dismantling of his forts, and that he will accordingly put the officers of Government into immediate possession of them for that purpose; and 3rdly, that he will surrender his person, that he may take his trial for the offences with which he stands charged, before the established courts of judicature.

4th. In issuing your warrant to Doondia Khan, you are desired to give the necessary attention to the movement of the troops already ordered to proceed against him for the reduction of his forts, and the apprehension of his person, in order that in the event of his refusal to comply with the regulations of Government, the troops may be immediately prepared to act against him.

5. Should Doondia Khan comply with the above mentioned requisition, you will of course apprise the officer commanding the force with the circumstance, in order that he may take the necessary measures for the occupation of the forts in question. On the other hand, should Doondia Khan neglect to conform to any part of the orders of Government within such limited and specific periods as you may fix for the purpose, you are desired immediately to communicate his refusal to the officer commanding the force, in order that

he may proceed, without loss of time, to employ the troops under his command, in the reduction of the forts, and in the apprehension of the person of Doondia Khan.

6. A copy of the foregoing order will be forwarded to the Provincial Commander in Chief for the information of Major General Dickens, and of the officers appointed to command the troops employed on the above mentioned service.

I am, &c.

(Signed) G. D. Secy. to Govt.

15th September.—The remaining 5 companies of the 23rd regiment of native infantry were ordered from Agra to Coel. The march of the two companies of H. M. 17th regiment of foot from Cawnpore to Muttra was expedited. The Pioneer corps, then stationed at Agra, was ordered to hold itself in readiness, to accompany the battering train whenever it marched.

19th September.—Major General Dickens having received information from the Magistrate of Coel, that the conduct of Doondia Khan was of such a tendency as to preclude every hope of his delivering himself up to the Civil authority, considered it his duty to issue the following orders:—

*Muttra, 19th September, 1857.**—The following corps and details to be held in readiness to march on the shortest notice:—

Artillery at Agra.

4 Iron 18-pounders with 500 shot per gun.*

2 Brass 8-inch howitzers with 100 shells each.

2 Brass 5½-inch mortars with 100 shells each.

2 Brass 12-pounders with 500 shot each.

1 Spare 18-pounder carriage.

Artillery detail for battering train.

* 2 more 18 pounders were afterwards added, so that in all 6 guns of that calibre were finally present at the siege.

1 Captain, 2 Subalterns, 3 Serjeants, 5 Corporals, 7 Gunners, 35 Privates.* 2 Serangs, 4 Tindals and 100 Gun-lascars, and 50 Bildars, besides other train establishments (Carpenters and Blacksmiths).

1 Squadron H. M.'s 21 Dragoons (from Secundra near Muttra).

The 6th Regiment Native Cavalry from Muttra.

2 Companies H. M.'s 17th Regiment of Foot (from Cawnpoor).

1st Battalion 9th Regiment Native Infantry (from Muttra).

1st Battalion 23rd Regiment Native Infantry (then at Coel).

1st Battalion 27th Regiment Native Infantry (from Agra or Muttra).

The flank companies of the several different battalions stationed at Muttra, Agra and Allyghur, and the corps of Pioneers.

20th September.—Colonel Horsford commanding artillery in the field was ordered to join the force.

21st September.—Mr. Spedding, Judge and Magistrate at Coel Allyghur, being obliged to leave the station on account of bad health, delivered over charge of that situation to Mr. Gardiner, the Assistant Judge and Magistrate.

24th September.—1st Battalion 9th Native Infantry crossed the Jumna on its march to Coel, and arrived there on the 28th.

To GEORGE DOWDESWELL, Esq. Secretary to Government,
Judicial Department.

SIR,

I have the honor to transmit for the information of the Right Honorable the Governor General in Council, copies and translations

*The reader will here remark that there was only 47 rank and file of European artillery-men for the service of the 10 pieces of siege equipment.

of the replies of Doondia Khan to the summons and proclamation issued against him from this court, agreeably to the orders of Government of the 14th ultimo.

I also enclose copies and translations of the statement sent in by the Cutwal of Shikarpoor, and of the depositions of witnesses, of the outrages committed by Doondia Khan's people in that village.

You will be pleased to observe, that there is nothing contained in their answer that has any analogy to the present business. They never mention the village of Musmunnah, but dwell entirely upon the pardon granted them formerly by Lord Lake, to the terms of which they say they have strictly adhered. After all that has been observed on this subject by the Magistrate and Acting Magistrate of the district, it will be superfluous in me to point out the absurdity and gross falsehoods contained in this last declaration, when it is known to every man in these provinces, that far from performing any of the conditions of that pardon, they have scarcely let a day escape without adding to the strength of their forts, in which they have constantly entertained a numerous force. To the style of their language I believe I need not advert.

The witnesses having attested the truth of the statement sent in by the Cutwal of Shikarpoor, and as these Zemindars still continue to strengthen their forts in every possible way, and are making every preparation for defence at the five different holds that they possess in this district, I shall conceive it my duty to adopt the measures that Mr. Spedding, the Acting Magistrate, intended to have resorted to under these circumstances, and to suggest to Major General Dickens, the necessity for reducing these persons at the earliest practicable period of time; and I trust the Honorable the Governor General in Council will be convinced of the necessity of immediately proceeding with a military force against these Zemindars, and be of opinion, that after their having been guilty of such crimes, they have forfeited all claim to his further lenity, and are no longer proper objects for the mildness of the law.

From the state of the present times, the different marauders in the district are on the alert to commit their depredations, and until something is done with respect to Doondia Khan and Runmust Khan, they will be hovering about for the purpose of plundering.

I have, &c.

Zillah Allyghur, }
26th Sept. 1807. }

(Signed) E. GARDINER, *Asst. Magte.*

(After usual Address.)

We have been favored with a summons to the following effect, by a Chupprassie, in the name of Doondia Khan and Runmust Khan, residing at Kamona:

“Whereas all the papers relative to the business of Musmunnah, in consequence of your violent and refractory conduct, have been submitted to the Right Honorable the Governor General in Council, and as at the time of the pardon granted to you by Lord Lake, you agreed to surrender the guns in the Fort of Kamona, to fill up the ditch and disband your forces, and as you have not only hitherto failed to perform those stipulations, but have disregarded the authority of the Court, your attendance is therefore required, in conformity to the orders of the Governor General in Council, before the Supreme Court of the Zillah of Allyghur, for the purpose of answering such questions as the Magistrate may put to you agreeably to the regulations, and you are hereby summoned accordingly. It is necessary that you attend the said Court within four days after receiving this summons.”

The state of the case is this—The rulers of this country, in consequence of our submissive state, have invariably treated us with kindness and favor; Lord Lake likewise in his correspondence with us, addressed us with consideration and respect, and we have accordingly letters in our possession. You, Sir, by addressing us in the style of contempt have degraded us among our equals. This we did not expect from you.

The circumstances with regard to the written agreement are as follows:—Lord Lake deputed Colonel Richardson to see that justice was done to us. Colonel Richardson accordingly, upon principles of justice and right, and in conformity to the orders of his Lordship, dismissed the

Dewan Sookh Salk, who, through enmity and falsehood, had involved us in trouble, and observing towards us a conduct of conciliation and encouragement, he delivered to us the written agreement, with his own seal and signature upon the face of it. The surrender of our guns in the fort of Kamona, the filling up the ditch round the rownee of the fort, and the disbanding of our troops beyond the number necessary for the collection of the revenue, were stipulated and agreed to; and according to this agreement we immediately delivered up the guns of the fort to the Colonel, the ditch round the rownee of the fort was filled up in his presence, and at the same time the troops were disbanded, and a list of them was sent to him. As we had then at that time fulfilled all these three conditions, the Colonel included in the written agreement delivered to us, his acknowledgment for the surrender of the guns, of the ditch having been filled up, and of the troops having been disbanded, agreeable to our engagements, as also that we had professed our submission and allegiance. Accordingly, the said written agreement, which was delivered to us conformably to the orders of his Lordship, is now in our possession, and to the present moment of writing we have not deviated in the smallest degree from the conditions stipulated in it, we have faithfully adhered to our engagements. If this written agreement should be required by the Government, we will send a copy of it, attested by the Cauzy, through our Vackeel. If, however, the Government are determined to deviate from their own written agreement, they are all-powerful and absolute; we are powerless and helpless individuals, and our reliance is on the Omnipotent God. Thanks to His Almighty and Holy Providence, that from the date of the engagements having been concluded, to the present moment, there is no proof of our having failed, either in our payment of the public

revenue, or in our allegiance, or that we have acted contrary to our faith.

(*Usual conclusion*)

The Arzee of } A true translation,
Doondia Khan, } (Signed) E. GÄRDINER,
Asst. in charge of the Magy.

Khan Bhahadar Runmust Khan, }
the 6th of the month Rudejib, 1222, Hijh. }

(*After usual address*)

I have had the honor to receive the proclamation of the Criminal Court of Allyghur, with which you favored me, by a Chuprassie, relative to my attendance upon you within the period of one month.

I have no objection to wait on you, but in the written engagements granted me by General Lake, he has, thro' kindness, excused my personal attendance. Now that you have issued a proclamation demanding my attendance, without holding any conversation with my Vackeel on the subject, I am convinced that you oppressively seek to effect my expulsion upon groundless pretences, and that you do not respect your own written engagements granted. As I am without power, and you possess entire authority and controul, you can direct whatever you think proper. I am helpless, but it is totally contrary to all principles of Government, and shews a total disregard of God, from whom, in fact, all power and possessions are derived; that you should calumniate and expel a helpless individual who is guilty of no crime. If you fear God, who knows all things, and respect your own written engagements, you ought to relinquish the idea of effecting my ruin, as I do not depart in the smallest degree from my allegiance, or from my agreements for the revenues of Government. Direct an attendance with all sincerity, in the usual mode

observed upon similar occasions by chiefs and rulers towards their subjects and men of respectability, and my son Runmust Khan has no objection to wait upon you.

(Usual conclusion)

10th of the month of Rudjub, } (Signed)
1st year of the reign. } DOONDIA KHAN.

True translation,

(Signed) E. GARDINER,

Asst. in charge of the Magy.

The Arzee of Sufdehwall, Cutwall of Shikarpoor.

(After usual address)

On Sunday the 16th September 1807, Runmust Khan the Tahseeldar, and Dewan Oomed Sing, having come to the village of Shikarpoor, from the fort of Gunnourie, with a number of Pyadas (foot soldiers), seized upon what grain, sugar, rice, seed, clothes, &c. they could find in the bazar, &c. and carried it off into the fort. The inhabitants of the town are injured and alarmed from the violence and forcible conduct of the Tahseeldar, who seizing whoever he chose, carried them with him into the fort, and whatever was necessary for their supplies, they plundered from the inhabitants and took away with them. I remained with 25 men at the Tannah. If more men are appointed, the town may be protected.

(Usual conclusion)

True translation,

(Signed) E. GARDINER,

Asst. in charge of the Magy.

The deposition on oath of Feyzoolah Khan, in the Criminal Court of Allyghur.

19th September 1807.—After the usual preliminary questions :—

Question. State the account of Doondia Khan's people coming to Shikarpoor and forcibly buying the goods. On what day, date and hour did it happen?

Answer. The account is thus :—The fort of Gunnourie is about $1\frac{1}{2}$ coss from Shikarpoor. About six days ago (the day of the month I do not recollect) 100 men belonging to Doondia Khan, in parties of 20, came to the village of Shikarpoor at different times and carried away from the shop-keepers, ghee, rice, gram, opium, bhang, hemp, oil, ghuzzee-cloth, thread, shoes and hookah snakes. I am ignorant if the prices were given or not. According to the best of my memory I will relate the detailed list and weight of the goods ;

40 Maunds of ghee.

10 Ditto of oil.

150 Ditto different kinds of grain dall.

80 Ditto gram.

5 Ditto bhang.

5 Ditto poppies.

25 Ditto sun (hemp).

40 Pairs of shoes.

100 Hookahs and snakes of different kinds.

10 Maunds of thread and some goor (molasses).

Q. Did the shop-keepers make no objection at the time of their goods being bought?

A. When the Sepahies of Doondia Khan came, they laid hold of the Chowdry of the bazar, and one or two of them sat down at each shop; whatever they required they carried away on the heads of coolies, and paid no attention to the remonstrances of the shop-keepers, but took it away forcibly.

Q. How many days were they in taking the goods into Gunnourie?

A. For four days I saw successively the Sepahies come and take away the goods, but for these two days I do not know what has passed, as I came away and arrived here yesterday.

Q. Were there any workmen taken into the fort?

A. They seized upon iron-smiths, carpenters, gold-smiths and curriers, and confined them in the fort for the space of 6 days; in the day time they worked and remained in the fort during the night.

Q. Do you know of any other act of violence committed at Shikarpoor?

A. Excepting what I have stated, I know none.

Q. Do you know if the price of the goods was given to the shop-keepers, or promised to them?

A. The Sepahies of Doondia Khan did not give the prices of the goods of the shop-keepers, but said that after the Dusherah it would be given."

FEYZOOLAH KHAN, + his mark,

True translation,

(Signed) E. G. Assistant.

The deposition of Kalee Khan, taken on oath at the Criminal Court at Allyghur, 19th September 1807.

Q. After the usual questions—relate what you know of Doondia Khan's people coming to Shikarpoor to buy food, at what date, day and time it happened?

A. Six days ago 100 men of Doondia Khan's, in parties of 10 and 20 men, came to Shikarpoor at different times, and brought hemp, poppies and bhang from the shop-keepers. I do not know whether they paid the price or not. The Buckally also went with them into the fort of Gunnourie. Gram was also brought from the fort to the village, which the Buckallies ground in shares that were given

them, and as I came away I do not know what has been done these two days.

Q. How many men of the village went into the fort?

A. The curriers and their families went into the fort of Gunnourie; they worked during the day, and at night remained in the fort.

Q. Did the shop-keepers give their goods willingly?

A. I do not know—there was a disturbance in the bazar, but I am ignorant if they received the price or not.

KALEE KHAN, † his mark,

True translation,

(Signed) E. GARDINER,

Asst. in charge of the Magy.

27th September.—The whole force ordered was now assembled, except the 2 companies of H. M.'s 17th foot.

To GEORGE DOWDESWELL, Esq. Secretary to Government.

SIR,

I have been honored with your letter under date the 16th instant, containing the instructions of the Right Honorable the Governor General in Council, with respect to Doondia Khan and Runmust Khan.

I had the honor of communicating to you in my letter of the 26th the particulars of the plunder of Shikarpoor, and of the outrage committed at that place by the people of Runmust Khan. The truth of the statement having been attested upon oath, and as they still continue their preparations for defence in every possible way, I conceived it my duty to address Major General Dickens on the subject, and to suggest the propriety of acting against these offenders without loss of time. A copy of my letter under date the 27th, I have the honor to enclose for the information of the Right Honorable the Governor General in Council. Under these circumstances I expect that the force destined for this service will very shortly commence its march for Muttra.

On its arrival here, I shall not fail to conform to the orders of Government, contained in your letter, and shall issue my warrant to Runmust Khan, requiring him to comply with the demands directed.

In the event of his refusal or delaying to return an answer beyond 24 hours, I shall communicate the circumstance to the officer commanding the force, in order that he may immediately act against him, and proceed for the purpose of immediately reducing his forts, and if practicable to secure his person.

I have not any expectation that either Doondia Khan or Runmust Khan will be induced to conform to these orders of Government; in the event, however, of their doing so, the instructions I have been honored with shall be strictly adhered to.

I yesterday received information that Runmust Khan had again, on the 24th, been committing violent and lawless acts, in the village of Shikarpoor, in seizing the persons of the different artificers at that place, and compelling them to work at the repairs which are carrying on at the fort of Gunnourie.

These persons have also lately been sending guns and people to Loh-Gurh, Khier and other holds that they possess in this district, and evince by the whole tenor of their conduct, a determination to resist, as far as they possibly can, the authority of Government.

I beg leave to add, for the information of the Right Honorable the Governor General in Council, that a Battalion of the 9th Native Infantry arrived here this morning, to reinforce the troops encamped here, in consequence of the acts of open hostility which Doondia Khan and Runmust Khan have committed.

I have, &c.

Zillah Allyghur, }
28th Sept. 1807. }

(Signed) E. GARDINER,

Asst. in charge of the Magy

To E. GARDINER, Esq. Acting Magistrate of the Zillah of Allyghur.

SIR,

I am directed by the Right Honorable the Governor General in Council to acknowledge the receipt of two letters from you, dated the 26th and 28th ultimo, with the enclosures, and to acquaint you that his Lordship in Council approves the application which you have made to Major General Dickens, to order the force destined to act against Doondia Khan to proceed to the reduction of his forts with as little delay as possible.

I am, &c.

Council Chamber, }
the 12th October, 1807. }

(Signed) G. DOWDESWELL,
Secretary to Govt. Judl. Dept.

Major General R. M. DICKENS, Commanding Field Army, Muttra.

SIR,

The circumstances of the plunder of Shikarpoor, which was communicated to you by Mr. Spedding, having been since clearly established, and as the conduct of Doondia Khan and Runmust Khan in this lawless outrage can only be considered as an act of open hostility against the Government, by which they have forfeited all claim to the benefit of our laws, I conceive that, under existing circumstances, I am fully authorised in deviating from the orders that were received "to wait the expiration of a month from the issuing of the proclamation." Under this idea I consider it my duty to suggest to you the propriety of acting against these persons in as short a period of time as possible.

I am the more induced to give this as my opinion, as these men still continue to strengthen their forts in this district in every possible way, and are making the greatest exertions in their power to enable them to resist the authority of Government; the longer therefore decisive measures are postponed, the more difficult the service will become.

Whenever therefore you may conceive the season far enough advanced to allow of Military operations, I request that you will be pleased to authorise the force destined to act against these offenders, to take the field, and to proceed for the purpose of taking their forts.

I have, &c.

Zillah Allyghur, }
the 27th Sept. 1807. }

(Signed) E. GARDINER,
Assistant Magistrate

1st October.—The battering train crossed the Jumna, and reached Coel on the 6th. The 1st Battalion 27th Native Infantry, and 6th Native Cavalry remained encamped on the bank of the Jumna opposite Muttra.

4th October.—This day Major General Dickens went to Allyghur to consult with the Magistrate and Collector; he returned on the 5th, and marched on the 6th from

Muttra, with four half squadrons of the 3rd, and five of the 6th Native Cavalry. He reached Coel on the 8th.

9th October.—This day the 2d Battalion 27th Native Infantry arrived at Coel from Muttra; the whole Detachment was now assembled at Coel, except the two Companies of H. M.'s 17th Regiment expected from Cawnpore, and the 1st Battalion 13th Native Infantry, which had been ordered from Bareilly.

The troops were this day brigaded as follows:—

Lieut. Col. Duff,	{	1st Battalion 9th Native Infantry,
1st Bn. 9th N. I.		1st ditto 27th ditto,
to command,		2nd ditto 27th ditto.
Lieut. Col. Burnett,	{	1st ditto 13th ditto (on its march
1st Bn. 23rd N. I.		from Bareilly),
to command,		1st ditto 23rd ditto.

RESERVE.

Lieut Col. Horsford,	{	2 half Squadrons of H. M.'s 24th
		Dragoons,
		4 Troops of the 3rd Nat. Cav.
		5 ditto 6th ditto,
		2 Companies H. M.'s 17th Foot,
of Artillery,		(on the way from Cawnpore),
to command,		A Bn. of Flank Companies formed
		of those of Nat. Corps in Camp.

10th October.—Lieut. Jones, of Engineers, being sick, Ensign Fordyce, of Engineers, was ordered from Delhi, and Lieut. McQuhae, of Artillery, was ordered to act as Engineer.

11th October.—The two Companies of H. M.'s 17th Foot, which had been ordered from Cawnpore, joined the Detachment this morning.

SIEGE OF KAMONA.

12th October.—The Detachment marched this morning from Coel Allyghur to Doondia Khan's fort of Kamona, and encamped to the south of the fort, with the left near to the village of Sahar. The village of Baun being about 1 mile in front of the left wing, and the fort half a mile in advance of that village.

The fort of Kamona was about 14 miles north of Allyghur, nearly in 73° east Longitude, and 28° north Latitude. A small space of 150 by 250 feet formed the whole of the area of the inner fort, which was a parallelogram, defended by a rampart, consisting of four curtains and four bastions. The inner fort was defended on the east, west and south sides by 4 large round solid bastions of from 60 to 80 feet in diameter, detached at a distance of from 200 to 300 feet from the inner fort: two of these were on the east or gateway face, and one on each of the south and west faces. A *faussebraye* or *rounee* of from 24 to 36 feet in width, extended all round these fortifications, being defended by a parapet, the exterior talus of which formed the escarp of the ditch, which was from 41 to 54 feet broad and about 21 feet deep. About 360 yards to the eastward of the fort, was a garden about 600 feet broad by 800 feet long, fortified by a parapet and ditch, with circular bastions at three of the corners; there was no bastion on the south-west side of the garden. A direct communication extended from the fort to the garden, defended on each side by a parapet. The ramparts and parapets were all of earth, there being little masonry except at the gateway and in the dwellings in the inner fort.*

* Kamona has been represented as a place "of great strength," in some European publications!!!—Compiler.

The requisition of Government to Doondia and his Son was, on the arrival of the Detachment, sent into the fort by the Acting Judge and Magistrate of the district.

In the evening, Captain Casement, Acting Deputy Adjutant General, with 300 Native Infantry and two 6-pounder Field Pieces, proceeded to take possession of such villages in the vicinity of the fort as seemed most suited to forward the primary operation of the siege, and perceiving that Doondia's outposts occupying the Cuttrah, had set it on fire, this officer pushed on the detachment, and took immediate possession of it, the enemy retreating into the fort.

This village was only 700 yards from the enemy's ditch, and the Detachment taking advantage of the mud walls of the houses, and of the smoke arising from the conflagration of the thatched huts, quietly entrenched themselves, unhurt by a wild and random fire opened from the fort.

13th October.—The Camp this morning was advanced 500 yards nearer to the fort, with the left close to the village of Sirbunnah, about 900 yards distant from the Cuttrah. Parties of Pioneers were for the first time sent out to cut fascine materials.*

This day the Acting Magistrate reported to Maj. Gen. Dickens, that Doondia Khan and his son Runmust Khan had failed to comply with the requisitions of Government yesterday addressed to them, and requested officially, the Major General would employ the troops in the reduction of their forts.

The fort continued firing occasionally during the day at the advanced party in the Cuttrah, but no casualties occurred. The Major General in a letter to the Adjutant Ge-

* The Pioneers performed this duty without assistance from the Infantry or Cavalry of the Detachment.—*Compiler.*

neral of the army stated that he was resolved to bring matters to as speedy a decision as possible.

14th October.—Parties of Pioneers were again sent out this morning to cut materials for fascines, and Major Nangrave's Corps, (the 1st Battalion 13th Native Infantry) from Bareilly, with two 6-pounder Battalion guns, joined this morning; this additional Battalion completed the force intended to be used in the siege. •

The following is a present state of the whole force:—

	Officers Present								Rank & File.			Grand-Total.
	Commissioned.					Non-Comm.			Europeans.	Natives.	Total.	
	Field officers.	Captains.	Subalterns.	Staff.	Native officers.	Qr. Masters.	Serjts Havds & Tindals.	Drummers & Trumpeters.				
1 Squd. of H. M.'s 24 Lt. Drags,	0	2	3	0	0	2	5	2	131	0	131	145
3rd Regt. of Nat Cav. 4 Troops,	0	1	9	2	12	0	16	4	0	286	286	330
6th Regt. of Nat Cav. 5 Troops,	0	2	6	3	13	0	19	4	0	310	310	357
2 Comps. of H. M.'s 17th Foot,	0	2	3	0	0	0	10	4	150	0	150	178
1st Bat. 9th Regt. Nativ. Infantry,	1	2	8	3	14	0	35	16	0	700	700	779
1st Do. 13th do.	3	3	14	3	22	0	49	19	0	832	832	945
1st Do. 23rd do.	0	3	8	2	28	0	45	20	0	710	710	816
1st Do. 27th do.	1	2	9	3	18	0	47	19	0	824	824	923
2nd Do. 27th do.	0	1	7	3	23	0	50	20	0	844	844	948
10 Flank Comps.	0	6	6	0	20	0	50	20	0	860	860	962
Art. & Pnr. Corps,	0	1	5	0	4	0	4	0	47	317	364	378
Grand-Total,	5	25	78	28	131	2	340	128	328	5683	6011	6761

15th October.—The Pioneers still employed in collecting materials for batteries. All empty tumbrils, carts and Artillery park carriages were sent off to Agra for more shot, shells, powder and other stores. Early this morning two brass light 12-pounders and a brass light 5½-inch howitzer were placed in the village of Baun, and at sun-rise the two 12-pounders were opened upon Runmust Khan's bungalow

in the south-east angle of the garden. Two or three 5½-inch shells were also thrown at the bungalow. Elevation, 10°; powder, 14 oz.; flight of shell, 9 seconds; distance of object, 1056 yards.*

OBSERVATIONS.

Considering how very limited the means in Artillery were, every shot and shell should have been reserved for more important objects, and not trifled away in the destruction of a bungalow.

This morning the Cavalry separated from the Infantry, and took up a position on the banks of the Callee Nudder, a small stream to the north of the fort, and about 5 miles distant from camp.

This alteration in the position of the Cavalry was made, with the intention of cutting off all communication between Kamona and the garrison of Gunnourie, another of Doondia's forts.

Lieutenant Jones and Eusign Fordyce, of Engineers, arrived in camp this day.

1 Havildar and 1 Private of Native Infantry, in the advanced post of the Cuttrah, were killed by a random shot from the fort.

Artillery Detachment Order:—Lieutenant Harris, with 1 Serjeant, 1 Corporal, 2 Gunners and 8 Matrosses, to proceed this evening at sunset to relieve Captain Lieutenant Lindsay and party at the Cuttrah; the Lascar detail to be relieved at the same time.

* The 12-pounders and 5½ howitzers then in use with the army in Bengal, were, as now, 12-pounders only 4½ feet long, and of about 8 cwt. 5½ howitzers of 2 feet 2 inches long, and 4½ cwt. with a chamber, which holds only 1lb. of powder.—*Compiler.*

This day Major General Dickens addressed the following letter to the Adjutant General of the Army:—

SIR,

I have the honor to acknowledge the receipt of your letter of the 2nd instant, and in reply beg leave to state, that in mine of the 19th September to your address, the details of the corps and establishments which I at that time intended to employ against Doondia Khan, were enclosed as a copy from the Field Army Orders of that date. Since that time, from what I consider a very sufficient cause, I have added to the force 2 Battalions, drawn from situations which will forward the relief, and 2 squadrons of the 3rd Cavalry. From every observation which I have been able to make, I am fully of opinion that the details now actually present, are by no means too numerous for the service to be performed.

16th October.—Preparation of materials continued.
1 Havildar and 1 Sepoy killed.

Artillery Orders:—The Detachment at the Cuttrah to be relieved this evening at sun-set. For the above duty Lieutenant Pryce.

This day the Major General addressed the following letter to Head-quarters.—

To MAJOR PATON, Acting Adjutant General of the Army, Calcutta.

Camp before *Kamona*, Oct. 16, 1807.

SIR,

I have the honor to acquaint you for the information of the Provincial Commander in Chief, that we continue preparing materials for the batteries; the first of which, for the purpose of breaking off the defences of the fort, I hope will be ready in about four days.

Yesterday evening 1 Havildar and 1 Sepoy of the 1st Battalion 9th Native Infantry were killed by a shot from the garrison: no other casualty has occurred, and all the troops continue healthy.

I have, &c.

(Signed) R. M. DICKENS, Maj. Gen.

Commanding Field Army.

17th October.—Preparation of materials continued.

Artillery Orders:—The Detachment in the Cuttrah to be relieved after sun-set. For the above duty Captain Lieutenant Lindsay.

This day the Major General addressed the following letter to Head quarters:—

To MAJOR J. PATON, Adjutant General, &c. &c.

Camp before Kamona, October 17, 1807.

SIR,

I have the honor to report for the Provincial Commander in Chief's information, that no event of any importance has occurred, nor any casualty taken place in the force, under my command, during the last twenty-four hours.

We proceed in collecting materials, and making every preparation for constructing the batteries, and I trust that the whole will be ready in the course of ten days. The first battery for knocking off the defences of the place will I hope be ready in four days.

I have, &c.

(Signed) R. M. DICKENS.

18th October.—Preparation of materials continued. No casualties since the 15th.

Artillery Orders:—The Detachment at the Cuttrah to be relieved this evening at sun-set. For that duty Lieutenant Pryce.

19th October.—Major Brooks, Deputy Quarter-master General, arrived this day in Camp.

Artillery Orders:—The Detachment at the Cuttrah to be relieved this evening at sun-set. For that duty Lieutenant Pryce.

Night between the 19th and 20th October.—This night a battery for 3 howitzers, viz. two 8-inch and one 5½-inch, was erected on the edge of the village or Cuttrah of Kamona.

20th October.—Artillery Orders:—The Detachment at the Cuttrah to be relieved this evening at sun-set. For that duty Captain Lieutenant Lindsay.

Night between the 20th and 21st October.—In the course of this night a Battery for three brass 12-Pounder Field Pieces was erected in the Cuttrah to the left of the Howitzer Battery, and about 50 yards from it, for the purpose of taking off the defences of the Fort. Both Batteries were about 650 yards distant from the Fort.

21st October.—Artillery Orders:—The Detachment at the Cuttrah to be relieved this evening at sun-set. For that duty Lieutenant Harris.

Night between the 21st and 22d October.—In the course of this night a Breaching Battery for six iron 18-Pounders was erected to the left, and about 300 yards in front of the Cuttrah. A trench of communication was also cut from the left of the Cuttrah to the 18-Pounder Battery; length, 300 yards. The three brass 12-Pounders were placed in their proper Batteries, and the iron 18-Pounders were brought down to the Cuttrah, ready to be put into the new Battery, which was about 300 yards distant from the Fort. One European of H. M.'s 17th Regiment of Foot and three Native Pioneer Rank and File were wounded this night.

Camp before Kamona, October 22, 1807.

SIR,

I have the honor to report for the information of the Provincial Commander in Chief, that during the course of last night the Breaching Battery was completed, and two 18-Pounders were got into it before gunfire this morning; this night will enable us to get in the remaining guns, ammunition, &c. and I trust we shall tomorrow morning open all our Batteries. I am happy to add that only one man of H. M.'s 17th Foot and three Pioneers were wounded in the trenches.

These casualties will be regularly reported to you by the Deputy Adjutant General.

I have, &c.

MAJOR PATON, (Signed) R. M. DICKENS, *Maj. Gen.*
Actg. Adj't. Genl. &c.

22nd October.—Between the hours of one and two P. M. the Enemy in considerable force sallied out of the Fort, attacked, and quickly beat back the party left to protect the 18-Pounder Battery; they then attempted to set fire to the Battery, but were in their turn repulsed, and obliged to fly into the Fort. This bold sally seems to promise a resolute resistance. During the time the Enemy were in possession of the Battery, a shot fired at them from one of the guns in the Cuttrah, injured one of the 18-Pounder Carriages in the Battery, shattering the cheek and axle-tree band. This day one European was killed, and Lieut. Hawthorn, one Commissioned and five Native Rank and File were wounded. Artillery Orders:—Detail of Europeans and Gun Lascars for the Battery duty:—

	Europeans				Golundauze.			Gun Lascars.		
	Captains.	Lieutenants.	Non-Comm'd	Matrosses	Havildars.	Naicks.	Privates.	Havildars.	Naicks.	Privates.
For the Breaching Battery,	1	1	1	23	1	1	22	1	2	60
„ Howitzer ditto,	1	0	1	6	1	0	8	0	1	15
„ 12-Pounder ditto,	0	1	1	8	1	0	8	0	1	15
„ Battery at the Cuttrah,	0	0	1	5	1	0	5	0	1	12
Total,	2	2	4	42	4	1	43	1	5	102

Captain for the grand Battery to-night, Capt. Lieut. Stark.
Lieutenant, Lieut. Pryce.
Lieutenant for the 12-Pounders, ——— Harris.
Captain for the Howitzers, Capt. Lt. Lindsay.

One Laboratory Man to attend the Howitzer Battery, and to be relieved daily. Two Mates and twenty-four Miners entertained this day.

Night between the 22nd and 23rd October.—A Detachment consisting of 5 Companies of Native Infantry and two 6-Pounders, under Captain Fraser, of the 1st Battalion 9th Native Infantry, marched this night at 10 P. M. to surprise the small fort of Anowna, which it was desirable to accomplish, in order to interrupt the communication kept up by means of this post between Kamona and Gunnourie. This attack failed—1 Native Officer, 1 European Artilleryman, and 15 Native Rank and File being killed, and 4 Artillerymen and 51 Native Rank and File wounded. The attacking party reached the Fort about 3 A. M. but far from finding the garrison unprepared (as was expected); they were, when within 100 yards, saluted with a heavy fire, but this was so ill directed that a 6-Pounder was drawn up to the outer barrier without the loss of a man. Much time and labor was, however, required to force a passage through this first barricade, but after a considerable delay the party got within the entrance. Unfortunately however the interior road or passage was so narrow and intricate that it was impossible to get the gun up to blow open the inner gate, notwithstanding the utmost exertions, the party was therefore drawn off and returned to Camp; the exertions of the whole of the Detachment were highly praiseworthy, and the conduct of Lieutenant Wilkie was particularly mentioned by Captain Fraser.

OBSERVATIONS.

A Petard might possibly have been useful on this occasion. This arm, exclusively intended for blowing open gates, is lodged in several of our magazines; but no instance

is known of its having been used within the Bengal Presidency. Frequent attempts have been made to force open the gates of Forts by means of guns mounted on wheeled carriages, which have failed solely from the total impracticability of getting a wheeled carriage through the narrow intricate passage leading up to the gate. A Petard could be fixed and fired in a few minutes, and is portable any where. While looking over this and preparing it for the press, a circumstance which occurred on the western side of India about the beginning of this year (1825), has come under our notice which we give hereunder in a note.*

* A Squadron of the 7th Light Cavalry, 300 men of the 41th Regt. Madras N. I. and one 6-Pounder manned by 2 Jemadars, the Quarter-master Serjeant and 12 Troopers of the 7th Light Cavalry, were despatched about the 21st of Feb. to demand the surrender of the Fort of Oomraiz near Sholapoor, which had been occupied by some rebels under a petty chief who had been committing some acts of depredation in the neighbourhood. The force arrived at day-break on the 22d of February before the Ghurnie, which was found to be much stronger than had been anticipated. The Patel having been summoned to surrender and the garrison having refused and fired, two flanking parties under Lieut. Dudgeon of the 41th M. N. I. were placed under cover to keep down the fire from the Ghurnie, The outer gate was blown in, and the gun, with some difficulty, brought in to a traverse that led to the second one, under a severe fire. The narrowness of the traverse, together with the Gun-Serjeant being wounded, and many of the Troopers being disabled, caused a considerable delay, and it took five shots to make a partial breach in the second gate. A most gallant rush was made in an instant by Capt. Hutchinson and Ensign Ramsey, and a lodgement effected inside with 20 Seapoys, but the door-way was too narrow to admit the gun to be brought through to burst the third gate, which would have given access to the Ghurnie. In pushing through the second gate (which was completely exposed to the fire from the Ghurnie) with a view of supporting their brave companions, a severe loss was sustained: Lieut. Phillipson of the 44th was killed and Lieut. Mines of

23rd October.—At day-light this morning all the Batteries opened upon the Fort, viz. six iron 18-Pounders, three brass Howitzers, and three brass 12-Pounders. At the sixth round from the 18-Pounder Battery, a shot struck a wide passage, seemingly an old door-way through the curtain, at the re-entering angle adjoining the right bastion. The 8-inch Howitzer was fired with 1 lb. 4 oz. of powder, 1 inch fuze, and $10\frac{1}{2}^{\circ}$ elevation, which answered very well.

the 7th L. C. wounded. *All hopes of getting the gun through having failed, and there being no Pioneers or scaling ladders, or any means of attacking the Ghurrie, Capt. Hutchinson's party was withdrawn, and the troops encamped a short distance from the village.*

Although unsuccessful, greater gallantry and devotion to the service could not have been shewn. The plan of the fort, which accompanied the details that have been kindly handed to us, evinces the spirit and determination that was displayed in encountering obstacles of no ordinary nature.

The day following the attack Lieut. Col. Collett raised an advanced Battery, and was preparing to attack the place by escalade, when he found it had been deserted during the night. A Detachment of Horse Artillery and European and Native Infantry had been ordered off from Poonah, but, on hearing that the Patel and his people had fled, the force was countermanded.

RETURN OF KILLED AND WOUNDED.

1st Regt L. C.,

- 1 Lieutenant severely wounded.
- 1 Quarter Master Serjeant slightly wounded.
- 1 Naique killed.
- 3 Troopers wounded.

44th Regiment Madras. N. I.

- 1 Lieutenant killed.
- 1 Subadar slightly wounded.
- 1 Havildar wounded.
- 5 Rank and File killed.
- 18 Ditto ditto wounded.

The 5½-inch Howitzer, with 8 oz. of powder, 8° elevation and 1 inch fuze. A great part of the curtain of the inner fort was battered down in the course of this day.

Expenditure of Ammunition.

300	18-Pounder shot, 18 per Battery.
103	12 „ „ 12 at Cuttrah.
7	ditto case 12 ditto.
31	ditto ditto Baun.

Total 441 shot.

23	8-inch Howitzer shell.
23	5½ ditto ditto.

Total 46 shells.

OBSERVATIONS.

The Breaching Battery was opened and directed upon the inner works, great part of the southern face of which was battered down in the course of the day.

The brass 12-Pounder Field Pieces in the Cuttrah fired above 100 shot to take off the defences of the Fort, that is, to destroy the parapet of the rownee or faussebraye, a task for which they were, particularly at such a distance, quite incompetent. We are totally at a loss to comprehend what object could have been effected by firing case shot from the brass 12-Pounders, which were 650 yards from the fort. Only Forty-six shells were fired in the course of 24 hours !

24th October. — This day the 18-Pounders were directed on the left rownee (faussebraye) bastion on the west face of the fort.

Expenditure of Ammunition.

276	18-Pounder shot,	} 18 per Battery
12	ditto case,	
134	12-Pounder shot,	12 per Battery.
12	ditto Ball,	

Total 434 shot.

54	8-inch Howitzer shell.
4	5½-ditto ditto.

Total 58 shells.

This day 276 18-Pounder shot were expended to breach or destroy the defences of the solid bastion on the fausse-braye on the west face of the Fort, and 134 shot were expended from the 12-Pounders in the Cattrah, also 58 shells in the course of 24 hours.

Night between the 24th and 25th October.—This night a trench of approach towards the Fort was commenced upon, beginning from the left of the 18-Pounder Battery in a line continued directly towards, but clear of the Fort: 60 paces of this trench were finished this night.

OBSERVATIONS.

Two days after the Breaching Battery had been opened, an advance was commenced upon to effect the establishment of an advanced Parallel.

25th October.—The fire of the 18-Pounders was this day turned on the right Bastion of the inner Fort.

Expenditure of Ammunition.

264	18-Pounder shot, 18 per Battery.	
172	12-ditto	12 ditto.
16	12-ditto	Baun.

Total 452 shot.

18	8-inch Howitzer shell.
19	5½-ditto

Total 37 shells.

The right bastion of the inner Fort was nearly destroyed this day by the 264 18-Pounder shot fired—172 shot were expended by the brass 12-Pounders in the Cuttrah and only 37 shells thrown in the last 24 hours.

This day the Major General addressed a letter, from which the following is an extract, to the Adjutant General of the Army :—

SIR,

Though I have no doubt the breach is practicable, yet Colonel Horsford* is of opinion, that in order to leave as little to accident as possible, it will be advisable, before the storm, to blow the counter-scarp into the ditch, to ensure the troops an easy passage into the body of the place. In this opinion I have coincided, and in conse-

* Colonel Horsford was at this period Commandant of the Artillery in the provinces above Añahabad, commonly called "*the Field Command*," and was called away from Cawnpore, to conduct the attack of Kamona, where he was entrusted, by General Dickens, with the direction of the siege; being at the same time, from his army rank, in command of one of the principal Brigades of the assembled force, he exercised an uncontrouled influence over the Artillery and Engineer departments, to the former of which he regimentially belonged.

quence we are using every exertion to accomplish this object, which will probably be attained in the course of 5 or 6 days.

Night between the 25th and 26th October.—This night the approach towards the Fort was advanced about sixty paces further.

OBSERVATIONS.

No working party from the line was employed, and as the trench duty was entrusted solely to the few Pioneers, the trench work proceeded very slowly.

26th October.—This morning the right and then the left rowence or faussebraye bastion was battered by the Breaching Battery.

Expenditure of Ammunition.

16-Pounder,	288 round shot,
18 ditto,	2 “ case,
12 ditto,	90 “ shot,
12 do. Baun,	28 “ shot,

Total 308 shot.

2 8-inch	} Howitzers.
20 5½-inch	

Total 22 shells.

H. M.'s 17th having arrived at Muttra, 2 more Companies of that Corps were this day ordered to join the army. A report from the Governor General's Agent at Bareilly to Major General Dickens was received, stating that intelligence had reached him of 500 Rohillas having gone off from Rampoorah during the last week, in separate and dispersed bodics, to offer their services to Doondia Khan, or ultimately to join Ameer Khan, in the Jaypoor country, and that a similar number were preparing to follow.

• OBSERVATIONS.

Such portions of the defences of the south and west bastions of the *faussebraye* as could be reached by the battery were this day laid in ruins.

Ninety shot were expended by the 12-Pounder Battery in the Cuttrah, while 28 were thrown against the fortifications of the garden; but only 22 shells were fired within the last 24 hours.

Night between the 26th and 27th October.—A small Parallel or place of arms was completed both to the right and left side of the trench, about 120 yards in advance from the 18-Pounder Battery.

• OBSERVATION.

The Pioneers get on extremely well, considering their limited numbers.

27th October.—The right side of the left bastion was battered this day, and then the curtain of the inner Fort, which was breached on the left, for a space of several toises.—Two Pioneers were this day wounded.

Expenditure of Ammunition.

12-Pounder Battery,	274	round shot,
12 ditto ditto	29	ditto,
Baun	34	ditto,

Total 337 shot.

Howitzer, 8-inch,	19	shells,
Ditto 5½ ditto.	24	ditto,

Total 43 shells.

OBSERVATIONS.

274 18-Pounder shot were this day expended on the left bastion and curtain of the inner Fort.

29 shot only were fired from the 12-Pounders in the Cuttrah, and 34 thrown at the fortifications of the garden, 43 shells being also fired at the Fort.

Night between the 27th and 28th October.—The trench of approach was this night continued forward in the same direct line as before, and two 5½-inch Mortars were placed in the left place of arms, of the small Parallel erected last night.

28th October.—Guns continued to batter as yesterday, but a little further to the right.

Expenditure of Ammunition.

18-Pounder Battery,	190 rounds,
12 ditto,	40 ditto,
Baum,	32 ditto,

Total, 262 shot.

Howitzer, 8-inch,	6 shells,
Ditto, 5½ do.	14 ditto,
Mortar, 5½ do.	20 ditto,

Total 40 shells.

1 European and 3 Native Rank and File wounded in the Batteries. A second supply of stores arrived this day, with Lieutenant Paulby, of Artillery, from Agra.

The following is an extract from General Dicken's report of this day's date to the Adjutant General of the Army:—

Sir,

From the great and continued exertions of Colonel Horsford, and all the Officers of Artillery, Engineers, and Pioneers, who of

course are more particularly employed in carrying on the approaches, I have every reason to hope that in six days more we shall be able to storm the place.

"If the siege should appear to have been long, I have only to say, that I considered it much more preferable for the public interest to carry on our attack in a regular manner, than to leave any thing to risk by attempting a *coup de main*. I trust that the Commander in Chief will approve of the steps which, with the perfect concurrence of Colonel Horsford, I have been induced to adopt.

(Signed) H. M. DICKENS, *Major General*.

1 European and 3 Native Rank and File were wounded in the Batteries this day, by the Enemy's marksmen.

OBSERVATIONS.

190 18-Pounder shot were this day expended principally on the inner Fort. Only 10 fired from the 12-Pounder Battery in the Cuttrah, and 32 at the fortifications of the garden; 20 shells were thrown from the Howitzers in the Cuttrah, and 20 from the Mortars in the small Parallel; in all 40 shells during the last 24 hours. The Enemy's marksmen stationed behind the parapet of the rönnee, became now troublesome to the working party in advance.

Night between the 28th and 29th October.—The trench of approach was this night carried on: the furthest extremity to within 80 yards of the glacis of the Fort.

29th October.—The fire of the Batteries was directed as yesterday.

Expenditure of Ammunition.

18-Pounder Battery,	90 rounds.
12 ditto ditto,	32 ditto,
12 ditto Baun,	38 ditto,

Total 160 shot.

Mortars, 5½-inch, 16 shells.

OBSERVATIONS.

The expenditure of the Batteries is considerably reduced. No shells were fired from the Cuttrah, and only 16 from the two 5½-inch Mortars in the advanced Parallel.

Night between the 29th and 30th October.—The trench of approach continued as before; a turn was made at the end, and nearly at a right angle with the approach, to form a large Parallel.

1 European and 1 Native Officer and 2 Rank and File wounded.

30th October.—This day the Fort curtain was battered, but the guns were not fired so fast as usual, *the breach being in every part practicable for some days.*

Expenditure of Ammunition.

18-Pounder Battery,	102 rounds,
12 ditto ditto,	66 ditto,
12 ditto ditto, ..	20 ditto,

Total 188 shot.

Mortar, 5½-inch, 16 shells.

OBSERVATIONS.

The gun Battery had now effected the complete destruction of the southern face of the inner Fort, and laid open the defences of the two round solid bastions on the south and west faces of the faussebraye, that is, so much of their parapet as could be touched by a direct fire, was brought down, and the body of the bastions themselves considerably injured; but the Enemy had still cover left behind those bastions, and many parts of the ronnee parapet which remained untouched, a plunging fire of shells might

have disturbed them; but only 16 rounds were fired from the Mortars in the course of the last 21 hours.

The two additional companies of H. M.'s 17th Foot, ordered on the 26th from Muttra, joined this morning under Lieutenant Colonel Hardyman.

Artillery Orders:—Lieutenant Parlby having arrived in Camp, is to do duty with the 2nd Company 2nd Battalion, until further orders.

This day the Major General addressed the following letter to Head-quarters:—

To MAJOR PARON, Acting Adjutant General, &c.

Camp before Kamona, October 30th, 1807.

SIR,

I have the honor to acquaint you for the information of His Excellency the Commander in Chief, that two Companies of H. M. 17th Regiment of Foot marched into camp this morning from Muttra, under the command of Lieutenant Colonel Hardyman.

During the course of last night the Pioneers have been employed in the advanced Parallel, distant from the crest of the glacis about fifty yards. This Parallel will I trust be completed to-night, after which the Miners will commence, and I hope all things will be ready for the storm in a very few days afterwards. Enclosed is a return of the casualties for the last 21 hours.

The man of H. M.'s 21th Light Dragoons was killed owing to his having straggled without arms to a considerable distance in front of the videttes.

Night between the 30th and 31st October.—The Parallel was carried on all this night; two Pioneer Officers, Lieutenants Ramsey and Anderson, were wounded, the former mortally. Lieutenant Brooke, of the Native Infantry, was also wounded by the mistake of one of our own Sentries,—1 Havildar and 1 Private of Native Infantry were also wounded this night.

Three of the 18-Pounders were this night placed in the 12-Pounder Battery, to fire on the flank of the left bastion.

The remaining three 18-Pounders continued in their proper Battery, in order to take off the defences of the right bastions of the front attacked.

31st October.

Expenditure of Ammunition.

18-Pounders,	188 rounds,
Baun,	50 ditto,
<hr/>	
Total 238 shot.	
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Mortar, 5½-inch,	22 shells.

OBSERVATIONS.

The three 18-Pounders in the Cuttrah took the west ravelin bastion in reverse, a fire from that direction being able to command a considerable portion of the parapet which could not be seen from the Breaching Battery, being shielded from its view by the body of the bastion. Only 22 shells were fired during the last 24 hours.

Night of the 31st October.—The Parallel continued. Ensign Fordyce, of Engineers, wounded while executing this work.

Lieutenant Harris, of Artillery, examined the ditch this night, and found it of considerable depth and width.

It is intended to commence mining to-morrow night.

1st November.—Batteries continued firing the same as yesterday.

Expenditure of Ammunition.

18-Pounder Battery,	66 rounds,
Baun,	40 ditto,
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Total 106 shot.	
<hr/>	
Mortar, 5½-inch,	13 shells.

The fire of the gun Batteries is extremely slackened, and only 13 shells thrown during the last 24 hours.

Major General Dickens this day addressed the following letter to the Acting Adjutant General:—

Camp before Kamona, Nov. 1, 1807.

SIR,

I have the honor to report to you for the information of His Excellency the Commander in Chief, that I have this day received intelligence from the Acting Judge and Magistrate of Coel, acquainting me that the Forts of Noh and Lohguhr have been evacuated by Doondia Khan's adherents, and occupied by the servants of Government.

I have, &c.

(Signed) R. M. DICKENS.

Night between the 1st and 2nd November.—The Parallel was this night pushed on in a line with the summit of the low rownee, on our left of the breach.

One Subadar, in the Engineer's employ, killed, and one Rank and File, of Pioneers, wounded this night.

2nd November.—The fire of three of the 18-Pounders was turned this morning on the low circular rownee, and the fire of the other three 18-Pounders (placed in the 12-Pounder battery) was directed on the re-entering angle of this rownee to the left.

Expenditure of Ammunition.

18-Pounder Battery,	80 round shot,
Baun,	47 ditto,

Total 127 shot.

Mortar, 5-inch,	12 shells.
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The fire of the Batteries still continued very slack, or at the rate of from 13 to 14 rounds per 18-Pounder, and 6 shells per Mortar during the 12 hours of the day.

This morning our Miners commenced sinking a gallery at the end of the Parallel, for the purpose of establishing a mine to blow in the counterscarp of the ditch. Our Troops took possession of the village on the left of the 18-Pounder Battery, called Gurgaghur.

3d November.—A detachment of Cavalry and 5 Companies of Infantry with two guns, under Major Nuthall, took up a position near the Enemy's Fort of Gunnourie.

The gallery of the mine was, in the course of yesterday and last night, pushed on, and by day light this morning was nearly 50 feet in length.

The Batteries kept firing as yesterday; no shells were fired.

Expenditure of Ammunition.

18-Pounder Battery, 57 rounds,

12 Ditto Baun, 41 ditto,

Total 98 shot.

1 Artillery-man killed, 1 Sepoy wounded.

Night between 3d and 4th of November.—Lieutenant Pepper, of the 2d Battalion 27th Native Infantry, was wounded slightly. The depth of the ditch was this night accurately measured and found to be 21 feet from the edge of the glacis or counterscarp, to the bottom of the ditch.

The distance from the mouth or entrance of the mine gallery to the exterior edge of the ditch is 107 feet.

4th November.—Batteries firing as before.

18-Pounder Battery, 37 round shot,

12 Baun, 74 ditto,

Total 111 shot.

Mortars, 22 shells.

One Sepoy killed, one Gun-Lascar and one Pioneer wounded.

The Battery at the village of Baun, consisting of three brass 12-Pounders at a distance of 1056 yards from the nearest angle of the fortifications of the garden, fired this day double the quantity of shot expended by the 16-Pounders, the expenditure of the latter being only at the rate of 8 rounds per gun in the 12 hours of day; 22 shells only were fired from the Mortars this day.

The gallery of the mine was pushed on by sun-rise this morning to within 90 feet of the counterscarp; the 18-Pounders were obliged to cease firing on account of the arch of the mine gallery, *which was not supported*, being much shaken at every round.

The intentions of the General and the Commandant of Artillery are to finish and charge the mine this night, to spring it and blow in the counterscarp early to-morrow morning, and immediately to commence breaching the scarp. A practicable breach, it is expected, may be effected to-morrow in 6 hours. The assault is therefore proposed to be given in the course of to-morrow, it being determined not to allow a night to intervene, which might afford the Enemy an opportunity to stockade the breach.

Night between the 4th and 5th November.—The three 18-Pounders which on the night of the 30th ultimo had been placed in the 12-Pounder Battery, were this night removed back into their own Battery, preparatory to breaching the scarp, and the three 12-Pounders were again replaced in their own Battery.

1 European and 1 Sepoy were wounded this day.

At 9 p. m. it was discovered that the mine had taken a wrong direction; a new direction was therefore commenced upon. The miners continue hard at work.

At 10 P. M. the Enemy opened a heavy fire, and sprung a mine near the foot of the glacis, opposite to our mine gallery, which at the moment did not appear to have had any detrimental effect on the mine gallery, nor did it occasion any loss.

5th October.—The 12-Pounder and 18-Pounder Batteries opened this morning, but fired slowly; the 8-inch Howitzer Battery was also opened. The 5½-inch Mortars ceased firing.

Expenditure of Ammunition.

18-Pounder Battery,	28 round shot,
12 ditto ditto	16 ditto,
Baun,	62 ditto,
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Total 106 shot.	
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Howitzer, 8-inch,	12 shells,
Mortars, 5½-inch,	2 shells,
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Total 14 shells.	
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Major General Dickens received this day the following report from Major Nuthall, Commanding the Detachment encamped near Gunnourie.

To CAPTAIN CASEMENT, Acting Deputy Adjutant General.

SIR,

I dispatched a Hurcarrah with a letter to you at this time yesterday afternoon. As he was met by the man going into Camp who brought out yours yesterday evening, the General's anxiety about the detachment has I hope been relieved.

I request you will be pleased to inform General Dickens that a Patrole of Cavalry left Camp this morning at day break, and near a

small village about 15 miles from Camp to the south-west of the Fort, they fell in with a party of 7 armed men on foot, who immediately on being discovered fled and concealed themselves in the village before our Patroles could come up with them. The village was instantly surrounded by our party, and the Jemadar ordered to give them up, which after some delay and threats of setting fire to the village, was complied with. They were immediately disarmed and sent into Camp, and are now in confinement, until I learn the General's pleasure concerning them. They state that they come from Bullumghur,* and acknowledge they were going in search of service. They were armed with matchlocks, tulwars and shields, and when first perceived, were in the act of loading. I have little doubt their intention was to get into the Fort of Gunnourie. Had our party have come up with them previous to their getting into the village, they would have been cut up instead of being brought in prisoners, as orders to that effect have been given wherever they fall in with armed men. I have brought the headman of the village into Camp, and shall punish him most severely, as an example to others, for having at first denied they were concealed in his village, and for not instantly turning them out when ordered to do so.

The Fort fired twice upon the Company of Infantry going down yesterday evening at sun-set to relieve the party at the Ghurry in the village of Burowlee, in front of our left flank, but without any effect. The Officer who came off duty yesterday evening reports the distance from the village to the Fort to be rather more than our right post at Kamona, and that it is capable of making a good resistance. Should the Troops be under the necessity of taking up a position before this place, it may become an acquisition, as well as a village still nearer on the south-west face of the Fort, about 2 miles from it on the same side. There is very good encamping ground with a tank and plenty of water.

I am endeavouring to get a correct plan of the Fort, which I shall send in, and such other information as may be useful.

I am, &c.

(Signed) J. NUTHALL, Major.

PROCEEDINGS BEFORE KAMONA.

6th November.—This morning at 8 o'clock a considerable part of the gallery of our mine gave way, owing to its being carried on without support, though the soil loosened by the explosion of the Enemy's countermine.

The gun Batteries fired very slackly; the Mortars and Howitzers remained silent on account of the mine gallery being much shaken at each round. The soil through which the gallery is carried is very sandy and dangerous to the miners, being likely to fall in if not supported.

This day the Grenadiers of H. M.'s 17th Regiment were ordered from Muttra to join the Army, in order to be present at the assault.

Expenditure of Ammunition.

18-Pounder Battery,	29 rounds,
12 ditto ditto,	8 ditto,
12 ditto Baun,	4 ditto,

.. Total 41 shot.

Night between the 6th and 7th November.—Cleared the mine where it had fallen in and pushed on the gallery.

7th November.—This day the following dispatch was received by Major General Dickens from Major Nuthall, Commanding the Detachment before Gunnourie.

SIR,

I have the honor to acknowledge the receipt of your two letters of yesterday's date, and shall do every thing in my power and use every exertion to cut off all communication between the Forts of Kamona and Gunnourie, and to prevent the garrison of the latter place drawing any supplies from the adjacent villages.

But altho' I can safely occupy the villages in the immediate vicinity of the Camp, it would be imprudent to put small parties of

Sepoys in the more distant ones, for if attacked during the night, they might be destroyed before I could send them any assistance, and the strength of the detachment does not allow large parties being employed. To endeavour to remedy this I have availed myself of an offer made by a very respectable Patan, who was formerly employed in this part of the country, when under General Perron, and who is well known to the Zemindars or head people of the neighbourhood. On a promise of future recommendation he has undertaken to establish himself in a rich and populous village, about 6 miles from this, the inhabitants of which had reported they were in hourly expectation of being plundered by the garrison of Gunnourie. The Zemindars of several villages have already come in, and have promised zealous co-operation with the Patan, and I am in hopes that most of the Zemindars will be induced to follow their example.

I ordered a Proclamation to be issued that all persons bearing arms, and found within a coss (two miles) of this, will be put to death, and I hope in a day or two it will be sufficiently known to prevent any travellers passing in this direction. Any thing else which may occur to me as likely to defeat the designs of the Enemy, I shall immediately adopt and communicate the same to you, and I hope the measures I have already taken will experience your approbation.

The arrival of the companies detached by you has enabled me to fulfil your wishes of occupying the town of Shikarpoor. The Officer in command of the party has strict injunctions not to suffer any supplies to be taken out of it, but such as are for our own Camp, nor to allow any laden cattle to leave it, without a previous communication.

I addressed a public letter to Captain Casement, a few days ago, to be laid before Government, respecting Purtab Sing, a prisoner in our Camp. He appears inclined to give information on an assurance of his life being spared.

(Signed) J. NUTHALL, *Major.*

One of the chambers of the mine was sunk by 7 o'clock this morning, and the Miners were preparing to charge it, when a portion of the gallery again fell in beyond the shaft, and nearly suffocated a man, who was however got

out; measured last night the depth of the counterscarp of the glacis and found it to be 21 feet.

No firing from the 18-Pounder Battery under an apprehension of its shaking the remaining part of the mine gallery.

Expenditure of Ammunition.

12-Pounder Battery,	7 round shot,
Baun,	60 ditto,

Total, 67 shot.

Howitzer, 8-inch,	4 shells,
Ditto, 5½ ditto,	1 ditto,

Total 5 shells.

One is at a loss to understand what effect this expenditure of ammunition could have been intended to produce.

All the Artificers were now employed in cutting and shaping woodwork, for supporting the gallery of the next mine which is intended to be again pushed on.

Information was this day given that the Enemy had two mines under the Parallel to their left of the one lately sprung by them.

3 Native Soldiers wounded this day.

Night between the 7th and 8th November.—Very little of the gallery fallen in during the past day; did nothing to it in the course of the day, but at night, began propping up that part of the gallery which required it near the excavation caused by the Enemy's counterminc. Proceeded, leaving the excavation of the Enemy's mine to our left; stopped work in the morning, being apprehensive of the Enemy discovering the direction of our mine.

*8th November.**Expenditure of Ammunition.*

18-Pounder Battery,	12 rounds shot,
12 ditto ditto,	7 ditto,
Baun,	18 ditto,
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Total 37 shot.	

8-inch Howitzer,	11 shells,
5½ ditto,	7 ditto,
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Total 18 shells.	

Carpenters working at the planks for the mine gallery, and Sawyers sawing; 11 saws at work, and all the Carpenters employed in preparing woodwork to support the gallery.

*9th November.**Expenditure of Ammunition.*

18-Pounder Battery,	16 round shot,
12 ditto ditto,	15 ditto,
Baun,	38 ditto,
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Total 69 shot.	

Howitzer, 8-inch	25 shells,
Ditto, 5½ ditto,	15 ditto,
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Total 40 shells.	

Night between the 9th and 10th November.—Planking up the gallery.

10th November.—Pushing on, and planking up the mine gallery—this morning again measured and found the distance—

From the mouth or entrance of the gallery to the mine,	72 feet,
From the mine to the ditch,	57 do.
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Total from the mouth or entrance of the gallery to the ditch,	129 feet.

Expenditure of Ammunition.

Bann,	2 rounds,
8-inch Howitzer,	4 shells,
5½ ditto ditto,	7 ditto,
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Total 11 shells.	

Carpenters employed in making planks for the mine gallery, and mantlets for the sap. The Grenadiers of H. M.'s 17th Regiment arrived this morning from Muttra.

This day received intelligence from the Fort, which is to be relied on, that two more mines which the Enemy had in forwardness, have both failed.

Lieutenant Harris of Artillery, Acting Engineer, slightly wounded this morning.

Lieutenant McQuhae of Artillery, was this day ordered to act as Engineer.

Night between the 10th and 11th November.—Miaers pushing on the work of the mine.

11th November.

Expenditure of Ammunition.

18-Pounder Battery,	0
12 ditto Bann,	9 shot,
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Total 9 shot.	
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8-inch Howitzer,	8 shells,
5½ ditto ditto,	4 ditto,
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Total 12 shells.	

This contemptible expenditure of ammunition could scarcely have annoyed the Enemy.

Major General Dickens this day addressed the following letter to the Adjutant General:—

SIR,

I have the honor to report to you for the information of His Excellency the Commander in Chief, that there is now every reason to suppose that the attack on Kamona will commence in the course of to-morrow. Our mine is ready and will be exploded (if no unforeseen circumstance takes place in the course of to-morrow); it may probably require five or six hours' battering, to breach the scarp.

I have, &c.

(Signed) R. M. DICKENS.

Night between the 11th and 12th November.—Lieutenant Jones, the Commanding Engineer, having reported in the evening, that the Enemy were countermining in different directions, orders were given for charging our mine, with the intention of immediately exploding it. The gallery was completed, and two chambers nearly finished, but before they could be loaded, at 8 o'clock P. M. the Enemy's Miners broke into the lower part of our gallery and ruined the whole. As soon as they were perceived, they were fired upon by the Pioneer Serjeant in the gallery, and fired again in their turn. At last, by dint of lighted sticks, and other combustibles placed at the opening which they had dug, the Enemy smothered our people out of the gallery.

12th November.—This day Major Nuthall, Commanding in the Camp near Gunnourie, sent the following dispatch to Major General Dickens:—

SIR,

3 o'clock P. M.

I have this moment been favored with your letter of this morning.

The Cavalry were kept in readiness to turn out the whole night, and this morning about 7 o'clock, hearing a heavy fire from towards Kamona, I detached parties in every direction to bring in intelligence of any appearance of the Enemy, and we were ready to intercept any coming towards this on either side of the Fort.

You may rely on a continuance of my utmost exertions to prevent any supplies getting into the Fort.

By the accounts I have received this morning, they appear to be much distressed for forage; their cattle in the Fort consists of 2 elephants, between 30 and 40 camels, and a number of horses and bullocks. Parties of their people were seen this morning cutting the grass jungle, and carrying it into the Fort; but even this supply I hope to be able to deprive them of, by burning the whole to-morrow. Our Cavalry parties are constantly round the Fort, and whenever any horse are observed going out of it, harass them much. I am almost convinced that nothing of consequence is carried in during the day.

I sent out a strong party yesterday on the road from this towards Jehangeerabad. The Officer on his return reported that the road in that direction appeared to him to have been much travelled over by hackeries, and there can be little doubt of its having been the place from whence the enemy drew many supplies. Two hackeries laden with boosah, which the driver acknowledged belonged to the town and were within 2 coss of this Fort, were brought into Camp. The accounts I have received of the present disposition of the people in this Fort, state their being much discontented and clamorous for their pay, and that several go off every night: this induces me to hazard the opinion that whenever Kamona falls, and the Army takes up a position before this Fort, it will be evacuated.

(Signed) J. NUTHALL.

12th November—continued.

This morning the Enemy fired up along the whole length of the gallery of our mine, and lighted such a fire at the end of it, as to cause almost instant suffocation to every one who attempted to get into it; they were busy mining all day, but ceased in the afternoon, at least their Miners were not heard after that time. Wood and other combus-

tibles were however seen bringing to keep up the fire at the end of our old gallery.

The fire from the 18-Pounder Battery was directed on the right or southern rownee bastion, which is intended to be made the breach for the troops to ascend into the place.

One Artilleryman killed this day.

Expenditure of Ammunition.

18-Pounder Battery,	226 shot,
12 ditto ditto,	20 ditto,
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Total 246 shot.	
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5½-inch Howitzer,	11 shells.
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Night between the 12th and 13th November.—Commenced a continuation of the Parallel by single sap this night, directed it towards the ditch in front of the rownee or faussebraye bastion on our right; this was begun at the entrance of the mine gallery and carried on 20 paces during the night. Lieutenant Swinten, Commanding the Pioneers, was wounded in the head this night while placing the gabions of the sap.

13th November.—This day Major Nuthall, Commanding in Camp near Gunnourie, sent the following dispatch to Major General Dickens :—

4 o'clock P. M.—Since my dispatch of yesterday evening nothing of consequence has occurred with the Detachment.

An Hurcarrah came in this morning from Jehangeerabad, who reports that yesterday afternoon, between 3 and 4 o'clock, a party from Kamona, consisting of seven horsemen and between twenty and thirty armed men on foot, arrived in a village near the town, escorting three doolies, containing wounded people from Kamona. At sun-set they went into the town, where they remained all night, and proceeded

early in the morning towards Gurmukteesur.* They had with them some wounded horses, and from being attended with such an escort, are, I imagine, Sirdars of some consequence in Doondia's service. I shall try to get intelligence if the party returns by the same route, and, if possible, cut them off. The Hurcarrah also reports that he heard a proclamation made through the town to the effect mentioned in your letter two days ago, by order of the head man of the place, who I understand is now in your Camp. I beg leave to suggest the propriety of his being under some pretext or other detained in Camp, for it is evident to myself and others, whatever his character may be, he is well inclined toward Doondia Khan.

I sent out a Detachment this morning to burn the high grass jungle surrounding the Fort on the west and the north-west sides, which they were pretty successful in doing, considering the dullness of the day. It appears to have made them very angry in the Fort, for they have been firing at our parties ever since.

The fire of the Batteries was this day directed on the southern bastion of the rownee. Began the sap at 9 A. M. and carried it on during the whole of the day.

One Native killed and 2 European and 2 Native Rank and File wounded.

Expenditure of Ammunition.

18-Pounder Battery,	440 shot,
12 ditto ditto,	50 ditto,
Baum,	35 ditto,

Total 505 shot.

8-inch Howitzer,	10 shells,
5½ ditto ditto,	12 ditto,
5½ ditto Mortar,	22 ditto,

Total 44 shells.

* A ghaut or ferry on the banks of the Ganges.

This day Major General Dickens addressed the following letter to the Adjutant General of the Army :—

SIR,

Enclosed is a Return of the Casualties during the last night, amongst which I am sorry to see the name of Lieutenant Swinton, Commanding the Pioneer Corps.

His wound though not dangerous is severe, and the loss of his services will be much felt. All the Officers of Pioneers (3 in number) are now disabled from wounds, and I cannot but think it would be a point highly beneficial to the service, if the number of this Corps, both in Officers and Men, was to be augmented.

In other respects I am happy to report we are going on well, though since I found our mining did not succeed, owing to the very great superiority in numbers of the Enemy's miners, it has been determined to proceed by sap, and to dig into the ditch of the Fort, towards which considerable progress was made last night, and will be continued without intermission.

14th November.

Expenditure of Ammunition.

18-Pounder Battery,	486 shot.
12 ditto ditto,	31 ditto,
Baun,	21 ditto,

Total 538 shot,

8-inch Howitzer,	6 shells,
5½ ditto ditto,	21 ditto,
5½ ditto Mortar,	9 ditto,

Total 39 shells,

The fire of the Batteries was directed as yesterday. The Enemy made many attempts to fire the rolling gabion of cotton and the sap gabion of straw, by means of fireballs, that is, powder in bags enclosed in clay. At one o'clock

they set fire to one of the sab gabions; the sap being carried to within fifteen yards of the ditch, and the Enemy's Miners being heard distinctly under the head of it, we made a turn to the right, and kept digging down to them.

Two Europeans and two Natives wounded.

Night between the 14th and 15th November.—About 8 o'clock Lieut. McQuhae, of Artillery, Acting Engineer, was severely burnt by a powder bag, thrown by the Enemy, exploding close to him. Between 10 and 11 o'clock the Enemy sprung a mine at the head of the Parallel, and completely destroyed it, throwing the gabions, &c. in every direction. Lieut. Jones, of the Engineers, one Pioneer, and several Miners were buried under the ruins. We had begun to descend into the ditch under cover of planks, from the head of the trench, when this happened.

Employed during the night in digging out the body of Lieut. Jones, and those of the Miners. Lieut Jones's was recovered about two o'clock, but the corpse of a Jemadar and three of the Miners could not be found amid the ruins.

N. B.—Every Officer of Engineers and Pioneers was now either killed or laid up by wounds.

15th November.—This day Major Nuthall, Commanding in Camp near Gunnourie, sent the following dispatch to Major General Dickens:—

SIR,

Nothing particular has occurred with the Detachment, to state to you to-day.

The return of a party of Cavalry to Camp, who were ordered to accompany Captain Bridges' Detachment, enables me to report the arrival of that Officer at Jehangeerabad, and I have the pleasure to transmit a letter received from Captain Bridges.

I moved round the Fort (Gunnourie) this morning, with 30 Cavalry, 50 Infantry, and a small party of Dragoons covering one of our Gallopers. We proceeded for a considerable distance under cover

of the jungle, without observing any people from the Fort, and just as we got to the edge of it, saw a few of their Horsemen amusing themselves close to the glacis, at whom we took a few long shot, which made them scamper off instantly into the Fort. They opened a fire immediately upon us from all their guns on that face; but threw the shot so badly, that not one came near us, although completely within their range.

I am in hourly expectation of a letter from you, announcing the intended attack to take place to-morrow, and shall be prepared accordingly.

• (Signed) J. NUTHALL.

This morning commenced clearing and making a passage through the ruins of our trench into the excavation caused by the Enemy's mine; the Enemy busily employed throwing firepots, &c. into the Parallel, and by this means finally drove us out from the excavation caused by their mine.

Expenditure of Ammunition.

18-Pounder Battery,	157 shot,
12 ditto ditto,	7 ditto,
Baun,	45 ditto,

Total 109 shot.

8-inch Howitzer,	4 shells,
5½ ditto ditto,	8 ditto,
5½ ditto Mortar,	16 ditto,

Total 28 shells.

Night between the 15th and 16th November.—Busy in carrying on the sap and in establishing a new mine to blow up the glacis of the Fort, and throw the counterscarp into the ditch; the head of the sap was carried close to the glacis during this night.

16th November.—The fire of our gun Batteries was this day directed on the right hand bastion and rowhee. Our mine was carried on during the day, and by the great exertion of the Officer directing it, was finally loaded and sprung at about half past 2 o'clock P. M. in hopes of throwing down the counterscarp. The gun Batteries immediately commenced firing on the part of the glacis which remained uninjured by the hasty explosion of our mine; 11 paces of the glacis remaining entire between the excavation and the ditch.

At the time our mine was sprung, the Enemy were busily countermining, and had the firing of ours been delayed, it is probable they would have exploded their mine and destroyed ours as before.

Expenditure of Ammunition.

18-Pounder Battery,	220 shot,
12 ditto ditto,	14 ditto,
Baum, ..	32 ditto,

Total 266 shot.

5½ inch Howitzer,	14 shells,
5½ ditto Mortar,	31 ditto,

Total 45 shells.

Night between the 16th and 17th November.—Kept up an occasional fire from the Batteries with round and grape in the direction of the breach, and fired shells occasionally.

17th November.—This morning our Batteries kept firing on the breach. The Enemy very quiet, and do not appear to have repaired it.

Expenditure of Ammunition.

13-Pounder Battery,	630 shot,
12 ditto ditto,	142 ditto,
Baum,	13 ditto,

Total 785 shot.

3-inch Howitzer,	13 shells,
5½ ditto ditto,	52 ditto,
5½ ditto Mortar,	23 ditto,

Total 93 shells.

The enclosed note from Colonel Horsford, says: General Dickens to the Adjutant General, will shew the state of forwardness we are in; and I trust this evening, or at latest to-morrow morning, we shall be able to storm; the arrangements for which purpose are made, and only await the breach being reported practicable.

Note from Colonel Horsford.

I am just come from the Battery; the Breach going on very well; I am not able to say whether it will be practicable so soon as we wish; but I have desired Colonel Clarke to report every hour the effect of the Battery. In the meantime you may perhaps think it necessary to make your arrangements on the probability of storming this afternoon.

(Signed) J. HORSFORD.

The arrangements to which the Major General alludes are laid down in the following order:—

“ Field Army Orders.—The five Companies of H. M.’s 17th, under the command of Lieutenant Colonel Hardyman; the Grenadier Battalion under Captain Drummond, and the Grenadier Companies of the 1st Brigade under the command of Major Nangreave, of the 1st Battalion 13th Regiment, to be kept in readiness to fall in at a moment’s warning, on the drums beating to arms.

“ A Detachment of 800 Rank and File from the 1st Brigade, with two 6-Pounders under the command of Lieutenant Colonel Duff, to be held in readiness to fall in with the above corps.

“ Colonel Horsford will take the immediate command of the Trenches and Batteries, and his orders are on all points to be immediately and implicitly attended to.

“ Lieutenant Colonel Hardyman, Major Nangreave, and Captain Drummond, will be pleased to attend at Colonel Horsford's tent, at such hour as he may appoint.

“ The whole of the troops off duty to be under arms on their respective Parades, ready to be detached whenever Lieutenant Colonel Hutchinson, the Field Officer of the day, may consider their services required.

“ The Cavalry to be saddled and ready to mount, and when the attack has commenced they will be detached in parties commanded by European Officers in such directions, as Major Philpot, Commanding the Cavalry, may judge best, for cutting off the retreat of the Enemy.”

18th November.—The Batteries kept up a heavy fire all day long on the breach and the rownee or faussebraye under the right or southern bastion, till half after 2 o'clock.

Expenditure of Ammunition.

18-Pounder Battery,	580 shot,
12 ditto ditto,	231 ditto,
Barr,	250 ditto,

Total 1060 ditto.

8-inch Howitzer,	42 shells,
5½ ditto ditto,	80 ditto,
5½ ditto Mortar,	40 ditto,

Total 162 shells.

They then fired with blank cartridge, while Colonel Hardyman and the storming party, consisting of five Companies of H. M.'s 17th Foot, the Grenadier Battalion, and the Grenadier Companies of the 1st Brigade, moved down to the assault of the breach.

The Enemy had placed a row of fougasses, or large quantities of powder in holes, or pits, all along the bottom of the ditch, between the breaches in the scarp and counterscarp, and for many yards on each side of them; and over these dry straw had been spread, as a means of communicating fire to the powder. They contrived it, so that the fougasses did not all explode at once, but one followed another at irregular intervals, spreading each time an intense flame far and wide, extending over the breach and ditch under it.

They had also contrived to place a large thatch of straw and bamboes, directly on the slope of the breach, in the rounce or faussebraye, which being set on fire, blazed and burned with great fury, rendering the whole space of the breach, a sheet of fire. It was impossible for any one to push through this burning pile.

When the blaze of the burning thatch ceased, and the storming party attempted the assault, they were assailed by the Enemy with numerous bags, clay balls, and earthen pots, filled with powder, which falling on the embers, immediately caught fire, and replaced the explosion and burning of the fougasses. The storming party descended the counterscarp, with some irregularity, caused by the broken ground over which they had to pass, but succeeded in placing the ladders against the breach in the scarp.

The enemy having sprung several fougasses in the ditch, as above described, continued incessantly throwing pots of powder with small matches attached, on the assailants,

which caused considerable confusion, and scorched many severely. The troops composing the head of the storming party unable to pass through this constant fire, inclining to the right and left of the breach, and placed themselves in the ditch, under cover of the untouched scarp, out of the way of the fire. The great body of the storming party however remained much exposed on the glacis, and in the excavation of the enemy's and our own mine. Some of H. M.'s 17th Regiment ascended the rounce or fausse-braye on the right of the breach, and got close to the top; but were received by the Enemy with long spears, and remained unable to mount the rampart. After a struggle, which lasted at least three quarters of an hour, the storming party at last gave way on all sides, and retreated into the trenches, leaving the Enemy in possession of our six scaling ladders, and of the killed and wounded. The scaling ladders were reported by some too short, other Officers said they were long enough but badly placed. Their length was 16 feet; the ditch was described as very narrow at the bottom, with shelving sides. Lieutenant Wilkie, of the Pioneers, with five or six of his men, got entirely up the breach, but were driven down by an explosion of gunpowder. About half an hour or twenty minutes before the storm of the breach, an attempt was made by Lieutenant Colonel Duff's Column, consisting of 800 Rank and File of Native Infantry, from the 1st Brigade, to carry the fortified Garden by escalade. In order to distract the attention of the Enemy, it was intended that this attack on the Garden, and the assault of the breach, should have been made at the same time. But the column destined for the breach was delayed soon after it got out of Camp, by a halt, which seems to have been considered requisite to enable the men the better to prepare themselves for the undertaking. The consequence was, that the attack on

the Garden commenced considerably before that on the breach, and it is believed, that many of the enemy in the Garden, encouraged by our attacking party there being unable to escalate that post (the scaling ladders being too short) reinforced those defending the breach. Assisted by this addition to their numbers, the enemy fought with redoubled confidence, and with a valour equalled only by that of our own column, but with much greater advantage.

This night at 10 o'clock Major General Dickens dispatched the following express to Head-quarters:—

Camp before Kamona, 18th November, 1807.

SIR,

It is a very painful duty for me to report to you for the information of His Excellency the Commander in Chief, the failure of an attack on the Fort of Kamona this afternoon at 3 o'clock. Our loss has been very great, particularly in Officers, the returns of which I trust I shall be able to send to-morrow, with all particulars. At present I can only say, that the bravery and perseverance of the troops has been most exemplary, altho' their success, from circumstances which I believe no prudence or foresight could have expected, has not been such as their exertions entitled them to. Among the killed I am truly concerned to mention the names of Lieutenant Colonel Duff, Captain Osborne Fraser, my Major of Brigade, Captains Ratcliffe and Kirk, of H. M.'s 17th Foot, and Captain Lieutenant Crown, of the 1st Battalion 9th N. I. besides a number of wounded.

(Signed) R. M. DICKENS.

9th November.—In consequence of an application from General Dickens, hackeries and doolies were this day sent to the Garden and Fort, to receive the killed and wounded, which the Enemy honorably brought out. No firing from the Batteries.

Major General Dickens this day addressed the following letter to the Adjutant General of the Army:—

SIR,

By an express which left Camp at 10 o'clock last night, I reported to you the unfortunate issue of the assault on the Fort of Kamona. I now transmit to you a return of the killed and wounded, which I am concerned to say is very numerous.

If any consolation can be derived from so unfortunate an event, it is the reflection that tho' their efforts were not crowned with success, no troops could have behaved more gallantly than all those of His Majesty and the Honorable Company did on this occasion.

The breach was reported practicable yesterday at noon; and for the information of His Excellency the Commander in Chief, I have the honor to enclose a copy of Field Army Orders, detailing the troops employed.

The five Companies of H. M.'s 17th Foot, under the command of Lieut. Col. Hardyman; the Grenadier Battalion, under Capt. Drummond, and six other Companies, under Major Nangreave, were destined to storm the breach.

A Detachment, consisting of 800 Rank and File, with a Brigade of 6-Pounders, under Lieut. Col. Duff, was directed to make a diversion by attempting to possess themselves of a fortified Garden, about 400 yards distant from the gate of the Fort.

Nothing could exceed the gallantry with which H. M.'s 17th Regiment led the attack, or the cool and intrepid manner in which Lieutenant Colonel Hardyman conducted them; their loss in officers and men will shew what their conduct was.

Lieutenant Colonel Duff was mortally wounded in the attack on the Garden, and most of the Officers under his command were killed or wounded. The loss in men was not so severe as that of the storming party, on which the Enemy threw down, whenever they came to mount the breach, large bags of powder, the explosion of which effectually prevented their progress. After two hours' perseverance, it was necessary at sun set to call off the troops, and I sent a letter to demand the killed and wounded; they are bringing them into Camp this morning.

In the course of this day, I may possibly be able to give you further particulars. The Returns being now ready, I send them off by express.

Return of Casualties at the assault of Kamona, on the 18th November 1807.

	Killed.										Wounded.									
	Brigadiers.	Bde. Majors.	Captains.	Subalterns.	Subadars.	Jemadars.	Sejts. & Havs.	Drummers.	Rank & File.	Horse.	Brigadiers.	Bde. Majors.	Captains.	Subalterns.	Suba dars	Jemadars	Sejts. & Havs.	Drummers.	Rank & File.	Horse.
Staff,	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Arty. { Eurpn.	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	4
Arty. { Native.	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	7	0
6th Regt. Natv Cavalry,	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	1
H. M.'s 17th Ft Grenadier Bat.,	0	0	2	0	0	0	3	0	33	0	0	0	0	5	0	0	2	2	98	0
1st Bat. 9th N. I.	0	0	1	0	0	0	1	0	11	0	0	0	0	2	1	0	5	2	76	0
1st Do. 13th do	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0
1st Do. 23rd do	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	3	0
1st Do. 27th do	0	0	0	0	0	0	1	1	9	0	0	0	1	2	0	1	3	0	27	0
2d Do. 27th do	0	0	0	1	0	0	1	0	19	0	0	0	0	3	0	2	9	0	90	0
Pioneer Corps,	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	1	0	12	0
Total,...	1	1	4	3	1	6	1	87	1	0	1	3	14	2	6	23	4	383	1	

Names of Officers Killed and Wounded.

Staff	{ Brigadier Wm. Duff, Lieut. Col. 1st Batn. 9th Regt. killed	
	{ Brig. Maj. O. Fraser, Brig. Maj. to Maj. Gen. Dickens, do.	
	{ Acting Brig. Maj. W. Foggo, Lieut. 1st. Bat. 9th Regt. wounded dangerously.	
H. M.'s 17th Regiment	{ Captain Radcliffe, killed.	
	{ „ Kirk, ditto.	
	{ Lieut. Wilson, wounded severely.	
	{ „ Harvey, ditto ditto.	
	{ „ Campbell, ditto ditto.	
Grenadier Battalion	{ „ Duddingstone, ditto ditto.	
	{ „ Harrison, ditto dangerously.	
	{ Captain Robertson, 21st N. I. killed.	
	{ Lieut. D. C. Livingstone, 21st N. I. wounded slightly.	
	{ „ McCartney, 11th Regt. N. I. ditto ditto.	
1st Battalion 9th N. I.	{ Captain S. Brown, killed.	
	{ Lieut. Sneyd, ditto.	
	{ Captain Fraser, wounded slightly.	
1st Battalion 27th N. I.	{ „ Mathew, ditto ditto.	
	{ Lieut. Rolland, wounded dangerously.	
	{ Captain Perkins, wounded severely.	
2d Battalion 26th N. I.	{ Lieut. Dunsterville, ditto ditto.	
	{ „ Corbett, ditto slightly.	
	{ Lieut. McLeod, killed.	
26th N. I.	{ „ Dennis, wounded severely.	
	{ „ Denty, ditto slightly.	
	{ Ensign Vetch, ditto ditto.	

Night between the 19th and 20th November.—About 8 o'clock at night the Enemy abandoned the Fort and Garden. This night Major General Dickens wrote the Adjutant General as follows:—

Kamona, Nov. 19, 1807—10 o'clock P. M.—I have the honor to report to you for the information of His Excellency the Commander in Chief, that we are in possession of the Fort and fortified Garden of Kamona, and that no time shall be lost in proceeding to reduce the other Forts belonging to Doondia Khan.

Total expenditure of Ammunition at Kamona.

Date	Rate at which the 18-prs. fired.	18-pdr. rounds.	18-pdr. case.	12-pdrs.	Baum.	Total Shot.	8-inch Howitzer	5½-inch Howitzer	5½-inch Mortar.	Total Shells.
Oct.	Rounds per gun.									
30	50	300	0	103	31	434	26	20	0	46
24	46	276	12	134	12	434	54	4	0	58
25	41	264	0	172	16	452	18	19	0	37
26	48	288	2	90	28	408	2	20	0	22
27	45 $\frac{2}{3}$	274	0	29	31	337	19	24	0	43
28	31 $\frac{2}{3}$	190	0	40	32	262	6	14	20	40
29	15	90	0	32	38	160	0	0	16	16
30	17	102	0	66	20	188	0	0	16	16
31	31 $\frac{1}{3}$	168	0	0	50	238	0	0	22	22
Nov.										
1	11	66	0	0	40	106	0	0	13	13
2	13 $\frac{1}{2}$	80	0	0	47	127	0	0	12	12
3	9 $\frac{1}{3}$	57	0	0	41	98	0	0	0	0
4	6 $\frac{1}{6}$	37	0	0	74	111	0	0	22	22
5	4 $\frac{2}{3}$	28	0	16	62	106	12	0	2	14
6	4 $\frac{1}{6}$	29	0	8	40	77	0	0	0	0
7	0	0	0	7	60	67	4	1	0	5
8	2	12	0	7	18	37	11	7	0	18
9	2 $\frac{2}{3}$	16	0	15	38	69	25	15	0	40
10	0	0	0	0	2	2	4	2	0	6
11	0	0	0	0	11	11	8	4	0	12
12	37 $\frac{2}{3}$	226	0	20	54	300	17	14	0	31
13	73 $\frac{1}{3}$	440	0	30	35	505	10	12	22	44
14	81	486	0	31	21	538	6	24	9	39
15	26 $\frac{1}{6}$	157	0	7	45	209	4	8	16	28
16	36 $\frac{2}{3}$	220	0	14	32	266	0	14	31	46
17	105	630	0	112	13	785	18	52	23	98
18	96 $\frac{2}{3}$	580	0	234	250	1064	42	80	40	162
		5036	14	1197	1144	7391	286	334	269	889

20th November.—Employed in bringing the Battering—Train into Camp, and the Stores into the Park.

20th November 1807.—Field Army Orders.—“Major General Dickens has the greatest satisfaction in announcing to the Army, the fall of Kamona, produced by the effects of the gallant exertions of the Troops in the assault of the 18th instant.

“To Lieutenant Colonel Hardyman, the Officers and Men of H. M.’s 17th Regiment, to Major Nangreave, Captain Drummond, and Captain Penson, who commanded the different Corps employed on this occasion, as well as to every Officer under their command, Major General Dickens begs to offer his approbation of their conduct. To the Native Officers and Troops, the Major General can truly say, that their behaviour was worthy of their European fellow soldiers.”

“Nothing can exceed the zeal, spirit, and alacrity which has been manifested by the Troops during the whole of the siege.

“In carrying on the approaches, and in the arduous duties of the Trenches and Batteries, the Major General is impressed with the highest sense of the obligation he is under to the professional abilities of Lieutenant Colonel Horsford, commanding the Artillery in the Field, and is fully sensible of the exertions of all the Officers of Engineers, Artillery, and Pioneers, and particularly those of Lieutenant Swinton, commanding the latter Corps, whose attention was unremitted till disabled by his wound.

“To the Acting Deputy Adjutant General, in every part of his professional duty, Major General Dickens is most particularly indebted, as well as to his own personal staff, the loss of one of whom he deeply laments.”

“Captain Casement, Acting Deputy Adjutant General, will be pleased to take charge of the Intelligence Department.

“ Lieutenant Byrne, Aide-de-Camp to Major General Dickens, is appointed Major of Brigade, vice Fraser, deceased, till His Excellency the Commander in Chief’s pleasure is known.

“ Cornet Dashwood, of the 2nd Native Cavalry, is appointed to act as Aide-de-Camp to Major General Dickens, till further orders.

“ Brigade Major Byrne to be Superintendent of Bazaars, vice Fraser.”

21st November.—All the ordnance, &c. were got ready to march.

Measured with a Perambulator the undermentioned distances:—Depth of the Village or Cuttrah, measured from the little Garden to the south down to the 12-Pounder Battery.	178 yard,
From the north of the Cuttrah on a line with the 12-Pounder Battery to the edge of the ditch under the right bastion,	622 ..
Breadth of the ditch at top,	18 ..
Total distance from the south of the Cuttrah to the rownee wall right bastion,	818 yards
From the edge of the ditch under the right bastion to the 18-Pounder Battery,	290 yards
Breadth of the ditch,	18 ..
Total distance from the 18-Pounder Battery to the rownee wall under the right bastion,	308 yards
From the Fort outer gate to the inner gate, ..	340 yards
From the Garden gate to the Bungalow,	190 ..
From the Fort outer gate to the Bungalow in the Garden,	530 ..
From the Bungalow in the Garden to the Village of Bauu where the 12-Pounder post was,	1056 yards

The Enemy had six mine galleries open in the ditch; some belonged to exploded mines, others had been destroyed by our mine; only one gallery was in good condition. At the bottom of the ditch all along the front attacked, were pits, sunk to hold powder, over which straw and thatch were placed. The excavation of our mine was 15 paces from the edge of the ditch to the centre of the excavation, or about 4 paces from the edge of it to that of the ditch.

The following is a copy of a letter addressed by Major General Dickens to the Adjutant General:—

SIR,

The Army marches to-morrow to Gunnourie, leaving the 1st Battalion of the 9th N. I. in Garrison here, till I receive the orders of His Excellency the Commander in Chief. The number of wounded has rendered it expedient to establish a Field Hospital at Coel, which has been done accordingly.

Survey Report of 6 guns captured at the Fort of Kamona, and in the entrenched Garden adjoining, held by order of Colonel Horsford, commanding Artillery in the Field.

Camp before Kamona, 21st November, 1807.

No.	Calibre.	Nature.	Mounted.	Where.	Remarks.
	Inch.				
1	2·8	Brass.	On a Field Carg.	In the Fort.	This gun has been repaired (the muzzle) with iron hoops.
2	2·3	Iron.	"	ditto	
3	2·4	Brass.	"	ditto	
4	2·3	ditto	"	ditto	
5	2·7	ditto	"	In the Garden.	
6	2·45	ditto	"	ditto	

N.B. A quantity of powder in large earthen jars, bags and boxes, how much not known. Shot none found, supposed to be carried away by the Camp Followers.

(Signed) A. LINDSAY, *Capt. Lieut. Artillery, President.*

S. PARLBY, *Lieut. Artillery, Member.*

J. HORSFORD, *Lieut. Col.*

The siege of Gunnourie, with observations on the proceedings there and at Kamona, in our next. . .

The Editor of the Repository, having had the compilation of the series of Bengal Sieges, already given in the Repository, attributed to to him, begs to repeat, that he is indebted for the whole to a Brother Officer, resident in the vicinity of Calcutta, and has not compiled them himself.

ARTICLE II.

SIR WM. CONGREVE AND CAPT. PARLBY.

"These insinuations must, however, no longer be permitted—the publication of this correspondence must and will remove them, and justice will be done"—*Extract from Sir William Congreve's letter to the Chairman, and Deputy Chairman, 21th July 1824.*

I should not have introduced, into the pages of the *Military Repository*, a discussion upon the present subject, if I did not feel that something is necessary from me, in the way of explanation, towards unfolding the misrepresentations of Sir William Congreve.

My duty to the Government I serve,—to the Army to which I have the honor to belong,—to the friends who have stood by me in the long and vain struggle against Sir William Congreve's powerful interest, all seem to demand, that I should set forth "my statement of facts, as publicly, as the accusations against me have been *privately but widely circulated*."

On my return from Java in 1815, I learnt that it had been the wish of the Earl of Moira to employ Rockets in the Nepaul Campaign, and on my passage up the Ganges to rejoin the Horse Artillery, to which Corps I was then attached, I met the Commander in Chief's fleet at Patna, on his Lordship's return to the Presidency, and addressed the following letter :—

To Major Doyle, Military Secretary, &c. &c. &c.

SIR,

Should it be the wish of His Excellency the Commander in Chief to employ Rockets in any active operations in the Field, which may take place, may I presume to offer my services in that department.

I have paid, from the time I was a boy, considerable attention to the construction of the common Rocket, and have made many, both in this country and in England, with success.

I am ignorant of the true construction and composition of the Congreve Rocket, which enables them to range to so great a distance; but I am confident that I can produce *Rockets of as great and certain range, and sufficiently destructive for any purpose.*

It is not from any expectation of emolument that I have presumed to make this offer: I have heard that it was his Lordship's wish to employ Rockets in the Field, and if my humble services are acceptable, I promise most ardently to devote them to the present purpose.

All I aspire to is the favorable notice of the Commander in Chief, should my services be beneficial, which in common with all my brother officers, it is, or ought to be our constant endeavour to obtain.

In case my offer meets with a favorable reception, it will only be necessary for me to be ordered to one of the Magazines, either Allahabad, Cawnpore or Futtyghur, with authority to obtain assistance in workmen and materials. I am now on my way to rejoin the Horse Artillery at Meerut, on my return from foreign service at Java, and do not wish my present offer to interfere with my situation in that Corps. I should of course beg to accompany my own Rockets to the Field of Action. Perhaps the Magazine at the Presidency, on account of the artificers in the arsenal, would be found the best for their construction in point of expedition, but there would be a great delay in sending them into the Field.

With the greatest respect,

I have the honor to be, Sir,

Your most obedient servant,

<i>Patna,</i>	}	SAMUEL PARLBY, <i>Lieutenant,</i>
<i>11th Sept. 1815.</i>		
		<i>Horse Artillery.</i>

After forwarding this letter, I had the honor of an interview with Lord Moira, who expressed himself in gratifying terms to me for coming forward on the occasion, asking me several questions upon the mode which I proposed to practice in driving the Rocket Composition, and whether I could make Rockets which would bear the shock of being fired from a Cannon, which his Lordship declared Sir William Congreve capable of doing.

To all these questions I answered apparently in a satisfactory manner, excepting to the last, viz. the possibility of making Rockets which would stand the shock of a discharge from a Cannon, which I did not believe was possible.

His Lordship then informed me, that he had sent for the Congreve Rocket from England; and therefore that it would not be necessary to try any experiments here, but that when the Rockets arrived I would be put in charge of them.

I have been particular in detailing the result of this interview with Lord Moira, because his Lordship never intimated to me in any way at that time, or subsequently, previous to my furlough, that any political or other objection existed against my proposition for making War-Rockets in India.

When I returned to England on furlough, in 1817, I drew up a Memorial, which I laid before the Court of Directors, on the subject of the manufacture of Gun-Powder and War-Rockets in India, in which I stated, that if the Honorable Court of Directors would appoint me Assistant to the Agent for Gun-Powder at Ishapore, on my return to India, that I would avail myself of every opportunity of instructing myself in the best mode of manufacturing Gun-Powder in England, and that the means which the Powder Works afforded, would enable me in the most advantageous manner to prepare the ingredients for Rocket Composition.

In the month of August 1817, I received an invitation to accompany the Chairman and some of the Directors, to inspect the Royal Arsenal at Woolwich, and to see some of Sir William Congreve's Rockets fired, and was accordingly in attendance on the day appointed, the 28th of Aug. at the India House, when I proceeded to Woolwich in one of the carriages provided for the occasion.

On the arrival of the carriages on Woolwich Common, the Directors and Suite left them at the entrance of the Royal Repository, on the right of the Artillery Barracks, and being met by several Officers of Artillery and Sir William Congreve, we proceeded first to inspect the Royal Repository under the latter Officer.

On leaving that interesting establishment, Col. Fyer's Rocket Troop was drawn up upon the plain, and performed a few manœuvres with blank Rockets.

We then proceeded to the Royal Arsenal, and went through the extensive set of buildings and costly machinery appropriated to the Gun-Carriage Manufactory; after this, we visited Col. Mudge's quarters, and then proceeded to the river side, where some spherical Case Shot were fired from some Field Pieces, and burst over the river. We also paid a visit to the old Upper-Academy, in the centre hall of which stood a working model of Sir William Congreve's machine for granulating Gun-Powder, which was put into work and examined. We then went to the range, where the Proving Butt is situated, and Sir William Congreve discharged a number of his Rockets, some singly, from tubes, and others in volleys, from the ground: we then returned to dinner at Greenwich.

It will appear that during this visit I never went near the Rocket Manufactory, neither at any other visit to Woolwich did I ever enter into it, or make a single enquiry as to the process employed by Sir William Congreve in the manufacture of his Rockets.

On inspecting the departments under Sir William Congreve, General Cuppage, Colonel Millar, &c. I was introduced by the Chairman, Mr. Bebb, to these several Officers, as an Officer of the Bengal Artillery, to whom he wished every thing to be shewn, the knowledge of which might be useful in my profession.

Sir William Congreve and General Cuppage politely invited me to repeat my visit to Woolwich at any future opportunity, when I could more at leisure inspect the departments under them; an invitation which I at the time rejoiced at receiving, and with regard to General Cuppage, soon availed myself of; but I never again visited the departments under Sir William Congreve, for reasons which I will now explain.

Soon after my return to England, I *heard* that the Court of Directors had rejected my proposition for making Rockets, as there was some agreement between the Court and Sir William Congreve for the supply of Rockets for India.

As I purposed to make my visit to the Repository in the next week, I sent Sir William Congreve a letter (a copy of which is inserted in Appendix III. No. 1., dated Thursday, September 6,* 1817), with a view to let him know every thing that had passed with regard to the Rockets (previous to my paying him my intended visit), with the hope of preventing any future misunderstanding upon the subject, and that he might or might not shew me any thing regarding his Rocket Manufactory, as he pleased.

At the time I wrote the letter, the impression upon my mind was, that I should never be employed myself in making Rockets, and that the Congreve Rockets would alone supply the demand for the Indian Armies; but as it was a weapon in which I felt greatly interested, and expected to be employed with on my return to India, my desire of gaining information from Sir William Congreve,

* There must be some mistake in the date affixed to the above letter, as it was *Thursday* the 28th of August that I paid my visit to Woolwich, and the *next Thursday* was the 4th of September. It is evident from my Letter to Sir William Congreve therefore, that the letter ought to have been dated before the 4th of September.

as to the use and application of his weapon, can be considered not only as natural, but as laudable.

Had I gone down to Woolwich on the invitation which Sir William Congreve gave me, on the 28th August, and obtained any information on the subject of Rockets, without making any communication to him of my proposition to the Court, &c. &c., then indeed might my conduct have been questioned, and justly. But my desire was that every thing should be known to Sir William, previous to my visit, and it was most fortunate that I wrote the letter, for it so turned out, that my views in supplying the Bengal Army with Rockets, were not put a stop to by any decision of the Court of Directors, while the letter, it will appear, effectually closed all information from Sir William Congreve, on the subject of his Rockets; and I can most truly say, that I afterwards neither sought for nor obtained one particle of information on the subject while in England.

Soon after forwarding the letter to Sir Wm. Congreve, I received a note from Mr. Cobb, the Secretary, to the following effect: that the Court of Directors could not so directly interfere with the patronage of the Governor General, as to appoint me Assistant to the Agent at Ishapore; but would bring the circumstances to the notice of the Supreme Government on my return to duty in India. In the mean time I was advised to prosecute my intentions with regard to Gun-Powder and Rockets, and informed that leave would be obtained for me to visit the Royal Powder Works of Waltham Abbey and Feversham. Accordingly I gave orders for the construction of a complete apparatus for making my experimental Rockets when I returned to India.

I will now say a few words on the abovementioned letter to Sir William Congreve, and let me urge the candid reader to consider the *intent* and the *circumstances* under which the letter was written.

When I went to Woolwich, with a mind enthusiastically alive to all that was connected with my profession, I was, as above stated, introduced to Sir William Congreve by the Chairman of the Court of Directors. I expected that I was about to form an acquaintance with the man selected by the ruling powers to superintend the most interesting establishment at Woolwich, with a man who (*I then supposed*) stood high in the scientific world, and who was particularly celebrated in mechanics and pyrotechny, two departments of science ever most interesting to me from my earliest years. I saw the Rockets (which I expected I might be employed in using myself in India,) range with beautiful precision and formidable force. It must be recollected that these were the first Rockets of Sir William Congreve's which I had seen fired with the stick attached to the centre of the Rocket, a great improvement on the old application of the stick on one side.

Under such circumstances, my admiration was greatly excited, and under these impressions was my letter written. At the same time I beg the reader to observe, that I considered the communication quite as a private one between Sir William Congreve and myself, and certainly not fit to be laid before the public, without an accompanying explanation. So little did I suppose it likely that it would be necessary for me ever again to refer to its contents, that I kept no copy of the same, which will account for my not having furnished it with my Statement of September 1823, and will answer Sir William's surmise as to the cause of its being withheld. My not having kept a copy, was distinctly stated in my letter to the Court of Directors of the 16th October 1817.

To the above letter, however, Sir William Congreve never deigned a reply, and this, for the time, put a stop to any further communication between us, and from circum-

stances which took place, I was induced to form a determination to show that I could produce Rockets at any rate equal to Sir William Congreve's.

On Saturday the 4th of October, Sir William Congreve went into Mr. Galloway's shop in Holborn, and discovered (which I had not ordered Mr. Galloway to conceal) that I was making some Rocket Cases and Apparatus. This was 28 days, or nearly one month after my letter to Sir William Congreve; even allowing it to have been written on the 6th of September, a period which, out of ten months, the whole extent of my stay in England, was no inconsiderable portion; yet Sir William Congreve is pleased to say, in his letter to the Chairman of the 24th July, that a few days after my letter of the 6th September was written, he discovered by mere accident, that I was making up Rocket Apparatus, &c. and is pleased to attach to me the gross charge of duplicity. Allowing that Sir William Congreve had, at the time of writing his letter of the 6th October, an impression that I had been acting with duplicity towards him, that impression ought to have been long since removed from his mind, when he was informed that the Court had not decided against my views of making Rockets in India; but had referred me to the Supreme Government, and from the subsequent circumstances, from which it will appear that Sir William *knew that he attempted in vain* to urge the Court to *forbid my adventure*. I leave it to the candid judgement of the public, to whom the charge of duplicity can fairly be attached, and whether Sir William Congreve can escape from it, in his attempt thus to injure me in the opinion of my Honorable Masters. But, if Sir William Congreve had this opinion of me, why did he write me his note of the 13th November, offering *me further information?* which offer, Sir William Congreve must be aware, that I refused, as well as his Book on Rockets, which he offered for my acceptance.

Early in the month of October, I was surprised at receiving a letter from my Engineer, in which was the following paragraph:—

“ I had a visit from Sir William Congreve on Saturday, and he eyed a few of your Rocket Cases by mere accident; he enquired who they were for: I told him they were for a private gentleman's use; he directly asked if they were not for you: I said I believed they were. He seemed quite astonished that any person should attempt to make Rockets without his permission; talked very high, and said that he would stop you from supplying the East India Company. He said also that he should write to you on the subject, and I have no doubt but he will use his utmost efforts to prevent your pursuing your experiments.”

A Letter from Sir William Congreve accordingly reached me, for which see Appendix III. No. II.

For my reply to it, see Ibid. No. III.

And for Sir William Congreve's reply to mine, see Ibid. No. IV.

On forwarding Sir William Congreve's letter to the India House, I addressed the Court as follows:—

To the Honorable the Chairman and Directors of the Honorable East India Company.

HONORABLE SIRS,

I beg leave to lay before your Honorable Court, a copy of a letter received from Sir William Congreve, also a copy of my answer to the same, which will, I trust, appear to your Honorable Court, to be consistent with that duty which I owe to my Honorable Employers, and I shall endeavour to answer, as clearly as I am able, the several paragraphs of that letter.

It is necessary, in justice to myself, that I should bring forward some circumstances connected with the subject of Sir William Congreve's letter, which will, I trust, entirely exculpate me in the opinion of your Honorable Court, from any indelicate conduct towards him.

In the Memorial which I had lately the honor to lay before your Honorable Court, on the subject of Rockets and Gun-Powder, I stated that I had from an early age, made the manufacture of Rockets my study (chiefly at first with a view to pyrotechnical amusements). That on my return to Bengal from foreign service at Java, in the year 1815, I learnt that it was the wish of the Right Honorable the Earl of Moira, the Commander in Chief in India, to employ Rockets in the Field in the Nepaul war, and that I accordingly made an offer of my services for this purpose, before I knew that the Congreve Rockets had been sent for from Europe, and several months before that supply did arrive in India.

That in consequence of my offer, I had the honor of a personal interview with the Marquis of Hastings (then Earl Moira) on this subject, who was pleased to approve of my proposal, though it was not then adopted, in consequence of the expected supply from Europe; but his Lordship was pleased with his own hand to put my name down for a situation in the Rocket Brigade, afterwards formed in Bengal, but which my ill health obliged me to decline, in consequence of my return to Europe.

But that being still conscious of my duty to your Honorable Company, and knowing I could manufacture Rockets in India, in every respect equal to Sir William Congreve's, and at one half of the expense of his, to your Honorable Company, and these Rockets being of an improved construction, entirely my own invention, the efficacy of which, by several expensive experiments, and at my own personal hazard and risk, I had convinced myself of, I humbly submitted my proposal again to your Honorable Court, in the Memorial which has lately received your decision, a decision which refers me for a final answer to the Bengal Government, on my return to duty.

In consequence of having been introduced to Sir William Congreve by the Honorable the Chairman, at the late visit of several of the Members of your Honorable Court to Woolwich, Sir William Congreve was pleased to give me an invitation to revisit Woolwich at a future day, when he offered more particularly to explain to me the models, &c. &c. under his department.

I thought it just and honorable on my part, before I accepted Sir William Congreve's invitation, to explain to him by letter, the subject of the memorial which I had submitted to your Honorable Court, in order that he might not unguardedly shew me any part of the mystery of his art.

I stated also to Sir William Congreve, the decision which my Memorial had received from your Honorable Court; but that as I was fully assured of the efficacy of Rockets for our military operations in India, there was not an Officer in your Honorable Service who would exert himself more than myself, towards endeavouring to extend the use of this species of weapon, and that whatever he chose to communicate to me on this subject, I should gladly attend to.

And I requested Sir William Congreve (if I am not mistaken, for I have no copy of my letter to him), to repeat his invitation, if he would still indulge me with the inspection of his models, &c. &c. and that he would name the day most convenient to him in the next week.

Since that period I heard no more of Sir William Congreve, until the receipt of the letter which I have now taken the liberty of laying before your Honorable Court. ••

In order to accomplish my purpose, and to lay my proposals with effect before the Supreme Government of Bengal, on my return to duty, it is necessary that I should have a machine at hand; and I have therefore, at the expense of £.70 constructed one, which the certificate of the Engineer, accompanying this letter, will prove to be entirely my own and his invention conjointly, and as far as I can learn, it is essentially, in form, principle, and application, different from those which Sir William Congreve makes use of.

I have also 200 Rocket Cases making, entirely of my own invention, and for my own experiments, and totally different from those made by the same Engineer for Sir William Congreve.

My intention in taking out this machine, &c. is not only to make Rockets if required, but also to refill the Cases of Sir Wm. Congreve's Rockets, which may have been fired for the practice of the Troops, which I shall be able to do at the most trifling expence.

I believe Sir William Congreve has stated, that his Cases are blown to pieces on being fired; if that is the case, it is a late improvement, for those which were tried at Dum-Dun, previous to my leaving India, were only slightly damaged, and with regard to my own Rocket Cases, I will engage that they shall stand 5 or 6 successive firings for the practise of the Troops, with very slight repairs on refilling them each time.

I trust the Honorable Court will never so fatally damp the zeal of your officers, as to prohibit them from devoting their individual time,

talents, and property, to any purpose which has the immediate benefit of your Honorable Service at heart; and I rest humbly confident of your support, after the satisfactory proof which I trust I have given, that what I have as yet done, or offered to do, is strictly my own, derived entirely from my own invention, and at my own risk and expence.

Doubtless it will appear to your Honorable Court, to be peculiarly hard, that Sir William Congreve should not be contented with the monopoly of his weapon in Europe, but that he should also endeavour to prevent those whose duty leads them to serve in India the best part of their lives, from improving an Asiatic weapon, for the benefit of your Honorable Service, and this not at the expence of the public purse, but at my own personal cost and hazard.

I beg leave to say, that I have no intention whatever to establish a monopoly for myself; on the contrary, I shall be happy to communicate my method of fabrication, to any Officer appointed from the Presidencies of Madras and Bombay, for this purpose.

Sir William Congreve has been pleased to say, that he conceives it his duty, on the most important public grounds, to protest against my proceedings, considering the highest interests of the Indian Empire endangered by my experiments; but I trust your Honorable Court will consider such an assertion in its true light.

For exactly the same argument might be brought forward against improving the manufacture of Gun-Powder in India, which the natives have been familiarized with from the earliest ages.

And, in fact, for the same reason, the introduction of improved Cannon and Ordnance into India, as well as all modern improvements in other branches of military science, might be objected to.

I cannot but consider it my duty, in common with every honest servant of your Honorable Company, to endeavour to lessen the public expenditure; we are taught that our very existence as a respectable Army depends upon such exertions, and I have but acted up to this sense of duty, by endeavouring to give proof, that I can furnish Rockets, equal to Sir William Congreve's, and at one half of the expence, by which means your troops would be supplied with them fresh and uninjured by a sea voyage of 15,000 miles.

I trust therefore that your Honorable Court will grant me permission to carry with me all the machinery I have constructed for this

purpose; which, together with some other machinery, and several models, I have at the further expense of £ 300 collected for the benefit of your Honorable Service, all which I shall be happy to exhibit to any Member of your Honorable Court who may wish to see them.

Sir William Congreve has expressed his surprise and concern, to find my work was going on in a public manufactory; I must say that I am at a loss to account for either, as the same Engineer, in the same public manufactory, was, I believe, employed by Sir William Congreve in making several Rocket Machines,* and a great number of Rocket Cases, some of which are now lying exposed to public inspection, in the very shop where those Members of your Honorable Court, who may wish to compare his with mine, have an opportunity of doing so, at any time, if they are not removed.

With regard to my having been admitted confidentially into His Majesty's Works, under the protection of a great public body (meaning your Honorable Court I suppose), I certainly went there with the avowed purpose of carrying away with me all the information I could, which might be beneficial to your Honorable Service: and this was my very plea for admission on my second visit to Woolwich, since that period; but I never went into the Royal Rocket Manufactory, nor did I gain any information regarding the fabrication of Rockets, at Woolwich, or from any individual concerned in the manufacture, and I declare, upon my honor, that when I went into Galloway's shop to give the necessary orders, I did not know that Mr. Galloway had ever been employed by Sir William Congreve.

I trust that your Honorable Court will therefore give me that permission, which it will probably appear unjust to deny me, viz. to carry with me to India, all the machinery and models which I have collected, at a great expense, and with considerable trouble.

And with my full assurance that it is not my wish to do any thing in an underhand manner, or contrary to the wishes of your Honorable

* Upon subsequent enquiry from Mr. Galloway, I found that he had only been employed to alter some Rocket Cases for Sir William from one pattern to another.

Court, I shall strictly conform to your decision upon the case, which I have now humbly submitted.

With the greatest respect,

I have the honour to be,

Honorable Sirs,

Your most obedient humble servant,

No. 2, Bloomsbury Place, }
London, 16th October 1817. }

SAMUEL PARLBj, Captain,

Bengal Artillery.

I patiently awaited the decision of the Honorable Court, and so far from being "*forbidden*" by the Court of Directors from proceeding in my adventure, as Sir William Congreve has asserted in his Appeal to the Court, of the 1st of February 1824, I never received any public answer, and I will leave the reader to judge what inferences any individual in my situation would have drawn from the following private communication:—

MY DEAR SIR,

As I know you will be anxious to hear any thing that passes respecting your dispute with Sir William Congreve; I venture to tell you, that his charge and your justification have been just read in the Committee of Correspondence.

No decision has been come to upon the subject; but the opinion seemed to be, what I thought it would, that the Court would not interfere, and that Sir William and Captain P. must be left to fire their Rockets at each other.

It will however be gratifying to you to know, that while the tone and tenor of your adversary's addresses to the Court and to yourself, were considered by the Members of the Court who were present, to be unbecoming and dictatorial; your statement and explanation, and particularly your short offer of acquiescence in the wishes of the Court, which concluded your letter, were very favorably received, and appeared to create a forcible impression of the fair, open, and manly conduct by which you had been guided on this occasion.

In my subsequent interviews with Mr. Bebb, the Chairman, while pressing for a decision upon the subject, I could only learn, that on account of the strong feeling which se-

veral of the Directors had in favor of Colonel Congreve's interests, that it was probable the Court would not in a direct manner support my proposal.

Being without the open support of the Court of Directors, and as I was not desirous of being considered capable of doing any thing in an underhand manner, I came to the resolution of proposing to Sir William Congreve, that if he would pay the expences I had been at in the construction of the machinery, &c. I would give up all idea of making my own Rockets in India, and offer to promote the use of Sir William Congreve's as much as lay in my power.

I was at this time surprised by receiving the following note from Sir William Congreve :—

SIR,

Having been informed by the Chairman of the Honorable East India Company, that the Court have disapproved of your taking to India any of the Cases, Apparatus and other preparation which you had made for the manufacture of Rockets, on the score of the uselessness of the measure, and that it is understood, that according to their desire you have given up all further proceedings in the business; I have now only to say, that *any further information I can offer you, as an Officer in the East India Rocket Corps, for the use and application of the weapon, in all its improvements, is much at your service.*

I am, Sir,

Carlton House, }
13th November 1817. }

Your most obedient servant,

WILLIAM CONGREVE.

The next day, after receiving this note, I waited upon Mr. Bebb, at the India House, with it, requesting to know if the Court had come to the decision which Sir William Congreve had asserted, and whether the Court disapproved of my proceedings. Mr. Bebb informed me that the Court had not come to any decision upon the subject, but that for his own part he wished me not to take out the *Rocket Cases*. I then said, that in obedience to his wishes I

would make the offer of my machinery, &c. to Sir William Congreve, and if he would pay all the expences I had been at, that I would give up the project. Accordingly on the 17th of November, I made the above offer to Sir William in the following letter:—

SIR,

As I find that I can dispose of my Rocket Cases and Apparatus, and I feel myself under the necessity of recovering the amount of my expenditure; I think it proper by all means to inform you, that I shall be most happy to deliver the 200 Rocket Cases, with the Compressing Engine, and all the Apparatus, to your order, if you are willing to pay the prime cost of the articles.

As I am particularly desirous that they should not fall into improper hands, and you will be the best judge how far this will secure so desirable a circumstance.

I shall have the honor of waiting upon you to-morrow, at ½ past 11, as I fear an engagement will prevent my being earlier.

I beg to assure you, that *in case you are willing to cover my expenditure in regard to Rockets*, that I shall be happy to be instrumental in promoting the use of yours in India.

I have made the subjects of Rockets and Gun-Powder so much my study, that I feel I have little to learn upon these subjects, except from those who, like yourself, are in possession of all that *practice united with theory* can teach, and I cannot cease to regret that a misunderstanding between us, should have prevented my reaping the benefit of an introduction to you.

I believe the amount I have expended in the Cases and Apparatus, is £ 260, but I will inform you more particularly tomorrow.

I remain, Sir,

Your most obedient servant,

SAMUEL PARLBLY.

17th November,
No. 2, Bloomsbury Place, }
Bloomsbury Square.

Sir William invited me to meet him the next morning in Cecil Street: I went accordingly, and was introduced to a Mr. Duberdy or Duberly, the first clerk of the works at Woolwich. After some general conversation on the sub-

ject of Rockets, Sir William Congreve said that he would accompany me to Mr. Galloway's, my Engineer, in company with Mr. Duberly, and any part of my machinery which could be turned to his account, he would be happy to propose to the Board of Ordnance to purchase.

I instantly replied to Sir William Congreve, that I would not allow any inspection of my machinery under such a proposal; that if he chose to pay the whole expence I had been at, that I should gladly make over the whole to him, and if not, that I would do my best, either to take out the machinery to India, or dispose of it in the most advantageous manner that I could; that the Court of Directors had not disapproved of my exertions, and that I was encouraged by several of the Directors.

Sir William said that as to my taking the machinery out of the kingdom, it was impossible; that an Act of Parliament would prevent that, and that he would use his utmost endeavours to prevent it, and warned me of the consequence of attempting to take Military Stores out of the kingdom, also that he would write to Lord Hastings, who would put a stop to any attempts to manufacture Rockets on my return to India.

Sir William attempted to ridicule my attempt to make Rockets equal to his, stating that he had not the least fear of competition on my part:—my answer to this was, then why do you exert yourself so much, to prevent my experiment; if I fail, it will be to my own discredit and loss, and so much more in favour of your own Rockets? He offered me his Book, on the formation of the Rocket Corps, &c. which I declined accepting:—and then saying that he had a Summons to attend at Carlton House, proposed that I should accompany him in his carriage so far, as we might further discuss the subject on the way. I accordingly entered the carriage with Sir William Congreve, and as we

went along, he endeavoured to impress upon my mind the strength of his interest at Carlton House, and with Lord Hastings, and how vain it would be in me to endeavour to oppose it; and that if I continued to persevere in my attempts to make Rockets in India, that it would doubtless be to the injury of my prospects in India. To all this I only replied, that of course, if Lord Hastings would not permit me to make Rockets in India, that I could not help it; but that my character was known to his Lordship and I relied upon that:—that I should not cease my endeavours to be allowed to produce my Rockets for competition with Sir William's, unless he chose to accede to my proposition of paying all my expences. As Sir William did not agree to this, we parted at the gates of Carlton House with this full understanding upon the subject.

The result of this interview induced me to wait on Mr. Grant, the Director in Bedford Square, on my return home, to whom I communicated what had passed. Mr. Grant expressed his regret that I had made any offer at all to Sir William Congreve, as to giving up my machinery; and urged me by all means to take the same out to India, saying that if I did not meet with support in an open manner now, that I might depend upon orders following me to India to allow of my experiments, and he begged me on no account to give up my project.

I waited upon Mr. Bebb the next day, and informed him of the result of my interview with Sir W. Congreve, representing to him the distressed situation in which I was placed, by having been encouraged to proceed in my experiments with regard to Rockets, at a great expence, and finding myself now deserted by those to whom I could alone look for support against Sir W. Congreve's commanding interest. I also informed Mr. Bebb of my interview with Mr. Grant, the Director, the day before; but

that if the Court would come to a decision upon the subject, I stated, that I would cheerfully submit to the same, though the decision was unfavorable to my projects; and in the afternoon, of the same day I wrote the following note to Mr. Bebb. —

To J. BEBB, ESQ. Chairman, East India House.

HONORABLE SIR,

Conceiving that it may be more satisfactory to you, that I state in writing what I had the honor to state to you verbally, I beg leave most respectfully to assure you Sir, for the information of the Honorable Court, that if they should upon consideration think it improper to allow me either to take to India the 200 Rocket Cases, which I have made, or to pursue my experiments in their construction, I am most ready cheerfully to bow to their desire, both in this and in every respect.

In preparing this small quantity of Cases, I felt that I was only acquiescing in the recommendation of the Honorable Court, as communicated to me by Mr. Cobbe, in September last, and if upon reconsideration they think it right to interdict me from bringing my plans to the test of experience, my inclination will unite with my duty, in implicitly obeying the commands of my Honorable Employers, notwithstanding the mortification of having spent a great deal of time, labour, and money, which will in that case be rendered unavailing.

I remain, Sir,

With the greatest respect,

Your obedient servant,

SAMUEL PARLBV.

To an application which I made on the subject to Mr. Davis, the Director, expressing my anxiety to have some public permission given me, to ship my machinery, &c. &c. as I expected all opposition from Sir William Congreve, I received the following reply, which is certainly not indicative of any *prohibition* on the part of the Court of Directors, but the contrary:—

DEAR SIR,

Had it not been for my absence from London when your letter was left at my house, I should have had the pleasure of answering it sooner.

All questions concerning the shipment of baggage on the Company's Ships, are referable to the Committee of Shipping, of which Committee I am not a member. I have therefore submitted your letter to Mr. Lumsden, with my recommendation in favour of a compliance with your request to be allowed to carry out to India your machinery.

I am ignorant of Sir William Congreve's claim to the exclusive manufacture of Rockets, and can only say, in answer to your observations, that in the event of your proposal to supply Rockets ever coming before the Court of Directors, I shall endeavour to express my opinion and give my vote, with strict impartiality.

I remain, dear Sir,

Very truly your's,

Portland Place, Friday.

• J. DAVIS.

Mr. Lumsden being out of town at the time, and being on the eve of leaving town to embark at Gravesend on board the ship on which I had taken my passage to India, I again waited upon Mr. Grant, who entered very kindly into the business, and promised that if I would be at the India House on the morning of the next day, he would see what could be done at the time; he advised me on every account to ship my machinery and baggage. In the morning I attended at the India House, and having drawn up a letter after my interview with Sir William Congreve of the 18th November, I requested Mr. Grant, if he thought proper, to lay it before the Court.

*To the Honorable the Chairman, Deputy Chairman, and Directors of the
Honorable East India Company.*

HONORABLE SIRS,

In consequence of my being on the eve of embarkation for India, in order to return to my duty on the Bengal Establishment, I beg

leave most respectfully to submit to your Honorable Court, the following list of machinery, &c. which I have constructed at a great personal expence, in the hope of rendering myself a more efficient servant of your Honorable Company, and promoting the interests of your Honorable Service, and I most respectfully request the permission of your Honorable Court, that I may carry the same with me to Bengal, or such ports as your Honorable Court may deem proper to include in such a permission.

I beg leave humbly to state, that in consequence of having had the honor of a personal conference with the Honorable the Chairman, who has requested me not to carry out the 200 Rocket Cases,* that I feel it my duty to submit to so great a personal loss, viz. £129, though I am in hopes your Honorable Court will be pleased to take into consideration, that if I am not allowed to carry out the Rocket Cases, it will be impossible for me to lay my proposal on the subject of Rockets, before the Government of Bengal, and thus the whole of their apparatus will be rendered useless, involving me in the great personal loss of £269.

It may appear to your Honorable Court, that I have by an inconsiderate zeal been betrayed into unnecessary expences; but I trust that the motives under which I have acted, will ensure me the protection of your Honorable Court against further losses and inconvenience, and as the Rocket Cases are only empty iron tubes, they cannot be considered objectionable, on account of their being military stores, without involving under the same denomination all the rest of my machinery, which is entirely professional.

I am led to understand that I may expect considerable difficulty in shipping any part of my machinery and baggage, on board the ship in which I have taken my passage to Bengal, through the interference of Sir William Congreve, who has openly declared, that no exertion shall be wanting on his part to prevent me from carrying my plans into effect.

* Mr. Bobb even on his expressing his wishes about the Rocket Cases, told me I could make others in India to supply their places, and *that leaving them behind*, the rest of the machinery could go without difficulty. The Cases were accordingly left behind, and were forwarded to Calcutta some time afterwards in a different ship.

As a servant of your Honorable Company, I respectfully ask that protection which it may be in your power to afford me, and though I am disappointed in the encouragement I had anticipated, from the great exertions which I have made since my return to England, to render myself better qualified to serve your Honorable Company, and to promote the interests of your Honorable Service, to the utmost within the power of my humble abilities: I rest assured that your protection will be granted me against further loss and inconvenience.

Since my return to England, in February last, I have expended the sum of £800 in Books, Instruments and Machinery, and I have performed more than thirty journeys in which the interests of your Honorable Service has been chiefly in view, to which all my family can bear witness, during which time I have visited the Gun-Powder Works of Waltham Abbey, Tunbridge, Feversham, Ore, &c. and I have visited London many times on circumstances unconnected with my private affairs, and I humbly trust that your Honorable Court may be pleased to take these circumstances into consideration.

With the greatest respect, I have the honor to be,

Honorable Sirs,

No 2, Bloomsbury Place,
London,
18th November 1817.

}

Your most obedient servant,
SAMUEL PARLBV, Capt. Lt.

..

Bengal Artillery.

No public communication relating to Rockets was however communicated to me, but I received a copy of the following letter, to bring with me to India, addressed to the Bengal Government.—

You have already been advised of the permission that Captain Parlbv has received to return to his duty upon your Establishment.

We understand that this Officer, both in India and since his residence in this country upon furlough, has paid particular attention to the manufacture of Gun-Powder, and that lately he has availed himself of the opportunity of inspecting the government works at Waltham Abbey, as also similar works at other places belonging to individuals; we cannot but express the hope, that if he shall appear to have qualified himself in the above line, he may be employed, in case it can be done without injury to the fair pretensions of others.

Colonel Salmond, the Military Secretary at the India House, also advised me to pursue my purpose with regard to Rockets, telling me that he felt assured Lord Hastings was too liberal minded to prevent my experiments when I reached India.

A few hours after this I left London for a friend's house near Rochester, where I remained with my family, until the Ship sailed from Gravesend in which I returned to India.

The following Letter from Sir William Congreve, was left at my Brother's residence in Bloomsbury Square, with a request from Sir William, that if I had left London, it might be forwarded to me.—My Brother accordingly sent it to me :—

Cecil Street, 21st November, 1817.

SIR,

As you did not think fit to accept the offer I made you the other day, of proposing to the Board of Ordnance to purchase your Rocket Cases and other Apparatus connected therewith, provided on inspection it appeared to me that they might at all be made useful to His Majesty's Service, and in your letter of the 17th November you state your motive for originally proposing to me to purchase them, to be your wish that they should not fall into improper hands. So I feel it my duty to urge, that since you admit they may fall into improper hands, you will be most careful that they do not, for that must depend entirely upon yourself.

I could go no further in the proposal I made respecting them, for certainly I could not recommend the Ordnance to take these stores, without seeing if they could be turned to any account, and also your offer of promoting the use of my Rockets in India if I could cover your expenditure in those articles. As I have already informed you that what I have done in this business has not been from any fear of a competition on your part, so there is nothing I could be induced to do by the hope of any assistance you could afford me. In short, I have no private inducement on this subject, but the same public feeling will be found to be the rule of my conduct throughout.

From all that passed the other day, however, it appears to me that you have not abandoned the intention of making Rockets in India. I have on that point only one word more to state,—That as I was the first person who armed Rockets with carcasses, shells, round shot, or case shot, you will have the goodness to observe, that if in any of your experiments you construct your Rockets on either of these plans, you are to all intents and purposes using my system, and it is not the adoption of one or two sticks, or any other variation of this sort that can prevent such adoption from being a direct imitation of the system which has originated by me, which no rule either of public or private feeling can justify; and which I am quite sure, neither the Court of Directors, nor the Governor General, will ever sanction.

I am, Sir,

Your obedient servant,

WILLIAM CONGREVE.

This was the *last communication* which I had from or with Sir William Congreve. Sir William Congreve had put it out of my power to come to any friendly agreement with him; and supported as I was by Mr. Grant's saying that orders would follow me to India, to allow of my experiments, I left England with a full determination of submitting the circumstances to Lord Hastings, and requesting permission to produce my experimental Rockets when I reached Bengal.

That Sir William Congreve, *after writing the above letter, and receiving no kind of answer from me*, should state in his letter to the Chairman and Deputy Chairman of the 10th July 1824, that he received the *strongest assurance that I had abandoned my project of making Rockets in India*, will, I feel assured, appear to the reader who considers Sir William Congreve's situation in life, incredible! yet such is the fact! here is Sir William's printed assertion of the 14th July 1824. (See letter to the Chairman, Appendix) Now all the other parts of Sir William Congreve's accusations, I could almost find some excuse for, in supposing that he had been misinformed; but *this assertion*, and that

of his having admitted me into his Rocket Works confidentially and without reserve! I can find no excuse for.

While I was staying with my friends near Rochester, I received a letter from my Engineer, the contents of which, I own, did not much surprise me after what had passed.

The following is an extract from that letter:—

Your brother will inform you of the great trouble I have had with 2 large cases of Machinery which I sent last week to have shipped; they opened the case which contained the Compressing Machine, and the Drilling Apparatus, under the authority of an old Act of Parliament, which prohibits every thing but a nail, a hatchet, and a saw from being exported, and I have been twice before the Commissioners of Customs; I have had to repack the whole of the things, and have had two men a day at the Custom House performing this duty.

The Machinery however reached the ship the night before we sailed, and I had the satisfaction of bringing it safe to India, and this was a great satisfaction to me, for I was informed that information was given at the Custom House, that I had been copying the Machinery at Woolwich, and was carrying it out of the country; and though I felt conscious of the originality of the whole of the articles I had constructed, yet the circumstance above mentioned, affords a strong presumption for stating, that if any part of my Machinery had resembled Sir William's, that it would have been seized.

On my arrival in India, I made the substance of the present statement known to Lord Hastings, through the Military Secretary Colonel Young, and I now subjoin the two replies of that Officer, conveying the sentiments of the Marquis of Hastings on the subject, which, if they do not altogether take the side of the question which I could have hoped and expected, at any rate acquit me in the opinion of the Marquis of Hastings, of any unfair conduct towards Sir William Congreve.

To CAPTAIN PARLY, Artillery, Dum Dum.

MY DEAR SIR,

I have had the pleasure duly to receive your several letters, and to lay them before Lord Hastings, who has perused the whole.

On the main question to which they refer, your controversy with Sir William Congreve regarding the manufacture of Rockets in India, his Lordship has commanded me to explain to you, very fully his opinions.

It appears that your proposals to the Court of Directors were transmitted in June, and before you had any communication whatever with Sir William, that your trip to Woolwich on the 28th August, was in obedience to an invitation from the leading Members of the Court, who introduced you to Sir William as an Officer of the Rocket Corps, that you declined returning to the Arsenal to repeat your visit, notwithstanding Colonel Congreve's invitation, until you had previously apprised him, that you stood with the Court in the position of a person soliciting an employment which was to supercede the necessity of sending his Rockets to India. If this order of facts and dates be the true one, Lord Hastings considers you to be clearly exonerated from any imputation of unfair dealing towards Sir William Congreve.

There are nevertheless many features in the transaction, which his Lordship cannot help regretting rather than blaming, and which may not have appeared to you in the same point of view, because you were too deeply interested, perhaps, to see very clearly.

It was scarcely to be expected that a young man of your rank could be proof against the temptation of an invitation to accompany your Masters to a Rocket inspection, although the very unusual condescension might have perhaps put you on your guard. But Lord Hastings greatly regrets that the invitation was ever given. It was to be expected that Sir William Congreve would at least be far more unreserved towards you, seeing you in the character of an Indian Rocket Officer, brought down by the Directors to improve yourself in the management of his weapon, than if he had been aware that a scheme was even then in agitation, to supercede his Rockets by yours, and that your appearance in the train of the Directors on that day, originated in this circumstance.

Lord Hastings is sure, from the repute in which your character stands for high and honorable feeling, that you could not have been altogether at ease during the visit to the Laboratory on the 28th of August, from a sense of your awkward position with regard to Congreve, whose ignorance of what was passing in Leadenhall Street, insured you, at least, a more frank reception than you would otherwise have met with. Indeed your subsequent letter to that gentleman, is a striking proof of what your own impressions were when you had leisure to reflect and to think for yourself.

Sir William declares, that under his erroneous impression regarding you, he told you, and shewed you, more than he would have done. You assert that he shewed you no secrets, nor any thing that the rest of the company did not equally see: there is nothing inconsistent in these declarations. Of course Sir William did not on that occasion, nor does he ever, exhibit the great secrets of his invention, whatever they may be. But is it not evident, that an unsuspecting man in his situation, would, without reserve, exhibit much to a company of General Officers, spectators of rank, Public Functionaries, and such persons, which he assuredly would not shew, were he aware, that an individual was among their ranks whose eyes and ears were familiar and alive to all he saw and heard, and who was embarked in a scheme, the success of which implied injury to the fortune of the exhibitor. Lord Hastings thinks you do not shew sufficient charity or candour to Sir William: had his Rocket discoveries been of an ordinary description, he would have secured the property of his invention by a patent, and the law looks with great jealousy to an attempt to infringe on men's inventions, by imitations that have not a very decided character of improvement on the original discovery. But a patent requires, as a condition, a full specification in detail, of the art or invention, for the benefit of the community, which surrenders to the individual, for a limited time, the natural right which every subject otherwise possesses to exercise his ingenuity in that particular art. Congreve's discovery could not be thus specified, without public injury, in a time of great public difficulty and danger; but Lord Hastings cannot help thinking that the nation, and every individual of it is bound in fairness and in honour, to guarantee to Sir William the same monopoly of his invention, which would have been secured to him by law, had the matter admitted of his guarding his rights by patent. If a rival, or many rivals, were to start up in England to-

morrow, and to offer to undersell Congreve's Rockets, the British Government would assuredly continue to deal with him, even at a monopoly price, and Lord Hastings does not see how the East India Company, or Government of India, can be rightly considered to stand exonerated from the same national obligation of good faith.

It is pretty certain that the Rocket Corps in Bengal will never become really efficient, unless it is supplied far more abundantly with Rockets, than it has yet been; in this inefficient condition it must however remain, unless the Court send out the materials for enabling it to practise, as well as to fight. An indent for a large supply was sent home more than a year ago, and on receiving that requisition, the Court will probably come to some resolution, either to discontinue the Corps altogether, or to obtain Rockets of Sir William at a cheaper rate, under a menace of manufacturing them on their own account. But even if the considerations on which I have above laid so much stress, were out of the question, Lord Hastings would hardly authorize the establishment of a Rocket Manufactory in India, without the positive permission of the Court, or rather without a special injunction to that effect.

The Directors have in the most peremptory terms prohibited the continuance of our Gun-Foundry,* lest we should teach the Natives the art, an art which they have practised for years, and with as great success as ourselves.

In the face of this injunction, the Government could not well venture to commence on the fabrication of War-Rockets, or countenance publicly endeavours to discover a secret, to which so much importance is attached in Europe. That any material improvements in the common Rockets which should be executed in our Arsenals or Laboratories, would not long remain in our possession only, is but too probable, not only from the fact that the Rocket is an Indian weapon, originally, and one on the fabrication of which the Natives were unrivalled till Congreve improved on it, but also from the notorious and successful endeavours, which the more enterprising of our neighbours set on foot, to obtain our newest improvements in these arts. You must employ European Soldiers, and Native Artificers, in your manufactory; and that the former may be debauched, and the

* The Foundry is now re-established, on a larger scale than before, with steam-engine machinery, &c.

latter easily enticed away, we know by experience. The Goorkhas possess the Tangent Scale, and are busy in improving their first imitation of the Shrapnell Shell, by the aid of a Deserter from Lindsay's Company I think, and some Native Artizans from our Magazines.

It will remain to be seen, whether on receipt of the Rocket incidents from the several Presidencies, the Court will publickly come to any determination about your scheme. Hitherto, you must have remarked, that they have shrunk from giving you any but indirect and secret support.

In regard to the other topics contained in your letter, it is my pleasing duty to express to you how much Lord Hastings is satisfied with your zeal for the improvement of your branch of the profession, and with the talent and ingenuity which you have shewn yourself to possess, his Lordship, in his capacity of Commander in Chief, will have great pleasure in bringing to the notice of Government, any of those projected improvements, which the Commandant of Artillery may recommend to his attention, and you will find Colonel Hardwick ready, his Lordship doubts not, to report favorably on any project which you may submit to him, connected with the advancement of science, or with advantages in practice.

The public recommendation of the Court of Directors, that you should be employed in the Gun-Powder Department, is very general in its terms, as you are aware, and as the assistantship at Ishapore has so lately been abolished by the Court's own injunction, Lord Hastings is not prepared at this moment to say he can recommend the re-establishment of that situation in your favor, but this is a point which his Lordship will take into consideration at a future period, and in the meantime you had better make yourself acquainted with the several processes in use at Ishapore, as well as those under course of adoption under the management of Captains McLeod and Galloway. Should you find that these fall short of any improvement you have in view, you would do well to draw up a memorial on the subject and forward it through Colonel Hardwick to the Commander in Chief, who will thus be put regularly in possession of grounds on which to recommend your employment in the Department of Gun-Powder.

The approaching return of Lord Hastings to the Presidency, renders it unnecessary at present to enter into any of the details on professional subjects, which your letter embraces; but when his

Lordship returns to Calcutta, you will have an opportunity of submitting to his inspection any of the contrivances or machinery which you have brought out, or are devising. It always gratifies His Lordship minutely to examine such things, and in the meantime his Lordship will readily sanction your exchange to a Company at Dum-Dum, on Colonel Hardwick's application, in order that you may not have to leave the Presidency until you have had time to look around you, and to wait for a favorable opportunity of being employed in the manner you wish.

I am, my dear Sir,
Yours very truly,

Goruckpore, }
4th June 1818. }

J. YOUNG.

I return the papers which you wish to keep.

On this letter I must beg to remark, that I was not introduced to Sir William Congreve as an Officer of the Rocket Corps, though I subsequently to my visit to Woolwich, informed Sir William Congreve that I might probably be appointed to it on my return to Bengal.

That I never declined going again to the Royal Arsenal at Woolwich, but to the Department particularly under Sir William Congreve.

I certainly felt honored by the invitation to accompany the Chairman and Directors to Woolwich, but I attribute the invitation to my personal acquaintance with Mr. Bebb. The visit of the Directors was not to see the Rockets only, but also to see the Royal Arsenal and Establishments at Woolwich; and I must add, that I should certainly gladly, under similar circumstances, have repeated the visit, nor have felt the least compunction on the score of Sir William Congreve's Rockets.

Had I been a man seeking in an underhand manner for information on the subject of Rockets, I should have proceeded differently, and probably I should have felt some thing of the feeling which Colonel Young insinuates that I did.

I subsequently explained all these circumstances to Colonel Young, in a letter, to which the following reply was received :—

MY DEAR SIR,

I have the honor to acknowledge the receipt of your private letter of the 12th instant, which I did not fail to communicate to Lord Hastings.

His Lordship desires me to assure you, explicitly, that he is well and fully satisfied with the explanations you have given, on several points connected with your dispute with Sir William Congreve. By referring again to my last letter, however, you will see that Lord Hastings gave you credit for all that you have now so distinctly and fairly stated. His Lordship only in fact pointed out to you, one or two matters, in which he thought you had slightly *fred*; that which referred to your trip to Woolwich, at any rate, was very venial in a person supported as you were, so decidedly yet tacitly by your immediate superiors; and you have now fully explained, how very little you could have profited by any thing shewn to you at the Review. The only point besides, and on which Lord Hastings wished you to be more indulgent to your antagonist, related to the unprotected situation of Sir William Congreve, in a legal view, owing to the nature of his discoveries.

I am now instructed however to repeat to you, that Lord Hastings' good opinion of you, is by no means impaired, and when a fit opportunity occurs, his Lordship will be glad to promote your views in the service.

I am, my dear Sir,

Yours truly,

Gorruckpore, }
23rd June 1818. }

J. YOUNG.

In concluding the statement which I laid before Government in 1823, I expressed myself as follows :—

I cannot but feel the most heartfelt satisfaction at the opportunity afforded me, of publicly justifying myself from the least imputation of unfair conduct towards Sir William Congreve; who, as the improver of this Asiatic weapon in Europe, has endeavoured to establish a claim, not only to the right of supplying the Indian Armies, but

actually of preventing any Officer of the Armies of the three Presidencies from experimenting on Rockets.*

Encouraged as it has I trust appeared that I was, by my Honorable Masters, to proceed in my experiments, and never having received any prohibition to my exertions, though repeatedly soliciting a decision on the case, I brought with me to India the means of putting my plans in execution on my return from furlough.

In humble submission to the opinion of the late Governor General, I have allowed these means to remain inactive to the present time.

During this period I am given to understand, that Sir William Congreve has gone to great personal expense, in the parish of Bow, near London, in establishing a Rocket Manufactory, which I do not believe was in existence when I was in England.

Sir William Congreve was aware, before he went to this expense, of the nature and extent of my proceedings. He was aware that the Court had not prohibited my proceedings, for I called upon him to produce his proofs of such a prohibition. He was aware that I carried with me to India, machinery, for the express purpose of submitting practical proof of my abilities to manufacture War-Rockets.

It does not appear therefore that Sir William Congreve can, with any justice, found a claim for his monopoly, upon any circumstance connected with the personal expense he has incurred, because he has received a personal salary and remuneration during all the time that he has pursued his experiments with regard to Rockets, and as he has now taken out a patent for killing whales in the Greenland seas

* Sir William Congreve, in his letter to the Court of Directors in Oct. 1717, called upon the Court to forbid any Officer at their three Presidencies from making any experiments with Rockets.—S. P.

with Rockets, it is probable that his manufactory will be constantly employed in supplying the European markets.

The circumstance of the deterioration of the Rocket composition, by exposure in this climate, independent of the danger of its suffering injury on the voyage, has been fully proved.

To have them fresh made therefore in this country, is an object of considerable importance, and the circumstance of my being able to refill the cases several times over, for practise, is a considerable one in point of economy in the more extended use of this weapon.

I trust it will fully appear from the present statement, that in proffering my services in the first instance, (in 1815) it was quite impossible I could have derived the least assistance from Sir William Congreve's plans, as his Rocket was then unknown to me except by name.

"The adoption of the small vents, round a single stick in the centre, was owing to a suggestion of Mr. Galloway, of Holborn, as he informed me himself when in London. I profess myself unacquainted with Sir William Congreve's composition, or mode of filling the cases. I have my own secrets, and my own plan for both.

My Rocket has also from its interior construction, a whirling motion round its axis, similar to a rifle ball during its course through the air, which Sir William Congreve's has not. This circumstance I trust I shall shortly have the satisfaction of exhibiting the advantage of, and I claim my mode of effecting it, exclusively as my own improvement.

I trust therefore that if it should be the pleasure of Government to employ me in the fabrication of War-Rockets, that I shall stand fully acquitted of being either the servile imitator of Sir William Congreve's plans, or of the least suspicion of unfair dealing towards that gentleman; who has now enjoyed the monopoly of the supply of his wea-

pon, for a longer time than a patent would have extended to, had Sir William Congreve taken out a patent in the first instance, in Europe. But such a patent never could have extended to this country, as the War-Rocket has been known and used here from time immemorial.

A P P E N D I X.

No. 1.

*Extract from an Appeal from Sir William Congreve, Bart.
to the Court of Directors of the Honorable East India
Company dated February, 1st 1821. Printed by J. Whiting,
3, Lombard Street.*

GENTLEMEN,

I should not have seized this moment, nor adopted this mode of bringing my case before you, had not a circumstance which has occurred in India, just been communicated to me, which admits of no delay. That I should thus address you in print, is not with a view of extending this Appeal beyond those to whom it is immediately addressed,* and whom it immediately concerns; confident that your liberality and justice, when my case is fully understood, would render any such extended publicity wholly unnecessary; but, as the statement is a long one, and as I feel called upon to transmit a copy to every Gentleman in the Direction, convinced that very few of them can be acquainted with the details of the case, I have thought it on

* Yet Sir William Congreve himself sent out this Appeal to Colonel Pennington, Commanding the Bengal Horse Artillery, under whose immediate command I had served for several years, and who in a manner most flattering to my feelings, placed it in my hands, telling me that he should inform Sir William that he had done so, on his arrival in England. Another copy of the Appeal must have been in circulation in Calcutta, as it was copied into a Public Journal at the Presidency.

SAML. PARLBY.

every account more advisable to print this (to me) important document, than to encounter the delay which must necessarily result from circulating it as a manuscript.

The circumstance to which I have above alluded, as calling for this Appeal from me with as little delay as possible, is, that I have just been informed, that while further supplies of Rockets have been refused to be taken from me, a Captain Parlby, of your service, has been allowed to make Rockets in India, for the supply of the Rocket Troops, upon my principle, copied in fact from those supplied by me.

The glaring injustice of this proceeding towards me, who am not only the inventor, but who have actually sunk the private property which I possessed, and besides involved myself in a heavy debt for the purpose of creating a manufactory, and erecting a steam-engine and machinery, for the express purpose of supplying the Company, by the consent of the Government, when they found themselves, at that time, unable to procure the Rocket they required, compels me, therefore, to this Appeal, and sure I am, that had those now in Authority in India, been aware of all that has passed on the subject of Captain Parlby's former attempts thus to take from me the fruits of my invention, after so many years of labor, and so great an outlay of capital, they would not sanction the measure which I have now so much reason to complain of.

It must be in the recollection of many Gentlemen now in the Direction, that, in the year 1817, Captain Parlby, being then in England, *first proposed to the Company to manufacture my Rocket in India, after having been admitted by me into the Rocket Works confidentially and without reserve*, little imagining that at that very moment Capt. Parlby was on the point of employing, and immediately afterwards did employ, an Engineer in London, to construct Rocket Cases and Machinery for him.

Being however shortly afterwards informed of this fact, I then represented the case to the Court, and Captain Parlby was forbidden to proceed in his adventure, not only out of justice to me, but also from the evident uselessness of setting a novice to work experimentally upon that which had been already achieved by me, &c. &c.

Postscript.

Being anxious that every step I take on the subject of this Appeal should be known to the Direction, I have caused the subjoined letter to be printed as a Postscript.

Cecil Street, 15th March 1824.

SIR,

I have the honor to request that you will be pleased to bring the inclosed document before the President of the Board of Controul, on the public ground of the impolicy of teaching the Natives of India to adopt the great improvement which I have made in their peculiar weapon, by establishing a Manufactory of my Rocket at Bengal, which is now attempted by an Officer in the East India Company's Service, although the measure was determined against by the Court in 1817, and was strenuously resisted by the Marquis of Hastings during the whole of his Government, upon the ground of its impolicy.

If, indeed, the Rockets could not be as well made in this country, or if they were at all deteriorated in their passage to India, there might be some reason assigned for such a measure, to balance the most serious objection thus attaching to it; but, Sir, the Board of ~~Controul~~ Controul will find it proved in the inclosed Appeal, that the Rocket may not only be manufactured in this country *much better*, under my inspection, than in India, but they may also be supplied from hence more *economically*; and, moreover, that they do not in the *slightest degree deteriorate* on the voyage, in proof of which I have annexed a variety of documents.

In fact, the Rocket is unquestionably shewn to be the most desirable ammunition hitherto invented; and I have accordingly stated to the Court my readiness to contract, for any supply they may wish, on the condition of forfeiting the value of every Rocket that fails, *within the first three years after* its arrival in India, with ordinary fair usage.

Sir, I do not wish to trouble the Board with the private part of my case; though it cannot fail to strike them, that it would be a most peculiarly hard case, if, after the great expense I have incurred to provide the means for supplying the Company with this, *my invention*, and while I am yet a heavy loser by this expense, the supply should be put into *other* hands.

I freely admit, that in my zeal to establish a weapon, which I knew would be peculiarly useful in India, I incurred this expense entirely at my *own risk*, without any contract, or understanding, or implication whatever, from the first order (to use the words of the Committee) that "*further supplies should be taken from me*"; but certainly, at the same time, with a distinct feeling, from the decision of the Court in

1817* against the making of Rockets in India, that although they had thus declared themselves *not bound to take further supplies*, still, if they did find it desirable *further to supply themselves* with my invention, that those supplies, in common fairness, would not be put into *other hands*, but ^{would} be taken from me; and of course, it *could be* only on *such a feeling* that I volunteered the risk!

I did it indeed, in the full confidence that the utility of my invention would, at no distant period, be established, so as to induce larger indents to be made. This period is now arrived, and very considerable indents have been made from each Presidency; I firmly rely, therefore, on the justice of the Court not to suffer me to be deprived of the fair reward for my invention, when its value in Indian warfare has thus been established; and I do not, therefore, as I have already stated, wish to press this part of the case on the consideration of the Board of Controul.

I have the honor to be, Sir,

Your most obedient and faithful servant,

J. P. Courtenay, Esq.

Secretary to the Board of Controul. }

W. CONGREVE.

Note.—So that it appears, Sir William, notwithstanding he had submitted his case to the Court of Directors, and while it was before the Court for consideration, wrote to the Board of Controul, on the public ground of the impolicy of teaching the Natives of India to adopt the great improvements which he had made in their peculiar weapon.

Why Sir William Congreve, it might as well be advanced as an argument, that it is impolitic to employ Native Armourers in all our Arsenals, for fear they should teach the Natives the art of converting *their matchlocks* into *muskets*, or *their tom-toms* into “*heart-stirring drums*”!

*The year before I established my Manufactory, how therefore could I then contemplate for a moment any further attempt, on the part of Captain Parlbby, to make Rockets in India?

Sir William Congreve, I recommend you to the perusal of your letter to me of the 21st November 1817. SAMUEL PARLBBY.

No. II.

*Copy of a Letter to the Editors of the Government Gazette,
the India Gazette and the John Bull, Newspapers.*

SIR,

As a printed "Appeal from Sir William Congreve, Bart. to the Court of Directors," &c. has made its appearance in a Public Journal of this Presidency, in which the author has stated, that in the "year 1817, Captain Parbly, being then in England, first proposed to the Company to manufacture my Rockets in India, after having been admitted by me into the Rocket Works, confidentially, and without reserve," I feel it a duty as an Officer of this Army, to deny in the most public and explicit manner, my having ever been in Sir William Congreve's Rocket Works.

Also I declare that to this day I am without any knowledge whatever, either by inspection or by description, of the nature of the Machinery employed by that person.

Also that my offer to the Honorable Court, was made *previous* to my first visit to Woolwich when on furlough in 1817, and not *after*, as stated by Sir William Congreve; also that my visit to Woolwich was in obedience to a summons from the Chairman of the Honorable Court, to attend at the India House on a certain day, to accompany the Directors to an *Inspection of the Royal Arsenal*, and that Sir William Congreve during the day, fired a few of his Rockets on the *Public Artillery Range in the old warren*, which includes all I saw of the Congreve Rockets while in England.

Also that I never was forbidden by any other authority than Sir William Congreve to proceed in my "*adventure*."

My first offer to make War-Rockets in India, was in a public letter to Major Doyle, Military Secretary to the Earl of Moira, dated Patna, 11th September 1815, and was made several months before the Congreve Rocket reached India, and before I knew of their being even sent for.

Also I further declare, that I never examined the composition of one of Sir William Congreve's Rockets; and that I never minutely inspected one of them, *until after* the late experimental trial at Dum Dum, at which examination (and Captain Graham, Commanding the Rocket Troop, will no doubt if appealed to declare the same.)

a very material difference in the formation of the two Rockets was discovered.

And I further declare, that the peculiar composition and formation of my Rocket, is entirely derived from my own invention.

I am, Sir,

Allahabad
Powder Works, }
8th September 1821.

Your obedient servant,
SAMUEL PARLBY,
Bengal Artillery.

No. III.

CORRESPONDENCE

BETWEEN

SIR W. CONGREVE AND CAPTAIN PARLBY,

*Submitted to the Court of Directors by Sir William Congreve,
in July 1821.*

*To the Chairman and Deputy Chairman of the Honorable
East India Company.*

Cecil Street, 10th July, 1824.

HONORABLE GENTLEMEN,

Being informed that Captain ParlbY has drawn up a statement, in which he denies that his proposition for making Rockets in India *was rejected* by the Court of Directors in 1817, and it being important to me to shew that *this was the decision of the Court* at that time; as upon the strength of *that decision it was* that I undertook at my own expense to erect the Rocket Works at Bow, for the Company, I feel called upon to transmit to you the following copies of a correspondence that took place between Captain ParlbY and myself, by which *this fact is distinctly admitted and proved*, in more passages than one of his own letters to me.

These letters of Captain ParlbY's further prove, that I shewed him the improvements I had then, in 1817, made in the Rocket, by placing the stick in the centre, &c.; and still further, that until these improvements, *which he has since thought fit to claim as his own*, were

shewn to him, his *only idea* of improving the direction of the Rocket, was in applying *three sticks* to it instead of *one* ! !

I am sorry to say, that when Captain Paribv's subsequent conduct is compared with his letters in 1817, it will not only appear, that he has treated the decision of the Court in 1817 with very little respect, but that he has conducted himself towards me with the greatest *duplicity*.

No. I.

To Sir WILLIAM CONGREVE.

2, Bloomsbury Place, Bloomsbury Square,

SIR,

Thursday, Sept. C, 1817.

Remarks by
Sir Wm. Congreve.

The kind offer which you made me on Thursday last (when I had the opportunity, the honour of which I have long desired, of being introduced to you), of making me better acquainted with the Royal Repository, I keep in mind, with the sincere hope, that I may not from any cause, lose the great and important professional advantages, which an acquaintance with you must lead to.

At the same time I wish fully to explain to you, how I am circumstanced; and am rather happy that a decision which has this day passed at the India House, will, I trust, when I state all the circumstances which led to it, prevent any future misunderstanding, which a want of candour on my part, or a misrepresentation on the part of others, might lead to.

I have served in the Bengal Artillery eleven years; eight of which I have served in the Horse Artillery; during this period I have expended considerable time and money in experiments on Gunpowder and Rockets. In the early part of the Nepaul War, I was on service with my Corps in the Island of Java; on my return to Bengal, in 1815, I then learnt that the Marquess of Hastings wished to employ Rockets, and I made an offer of my services for this purpose, being strongly convinced of their utility. In my letter to Colonel Doyle, the Military Secretary, I stated that I did not know the construction of your Rockets; but that I was

It will hardly be believed that with these words in his mouth, Capt P. was, at this time, making rocket cases in London, without communicating it to me.
W. C.

Remarks. conscious that I could produce Rockets, effectual for any service. A Copy of this Letter I shall have the honor to show you. In consequence of this offer, I had the honor of an interview with the Marquess of Hastings on this subject, who informed me, that Rockets had been sent for from Europe, and that it would therefore be unnecessary to attempt to manufacture them in Bengal.

His Lordship appointed me to the Rocket Brigade, which was just formed; but on account of ill health, I was obliged to return to Europe.

Proofs that Since my return I have repeated my offer to the Hon-
Capt. Paribby's norable the Court of Directors. I was not at all
proposition aware of any agreement on their part towards you; but
was refused aware of any agreement on their part towards you; but
by the Court came forward with a zeal for their service, which I have
in 1817. W. C. always endeavoured to shew, with the offer of that
 And yet he humble ability which I possess. *The Court have ac-*
now pretends humbled this day according to my proposal. Of course, I trust.
to say, his pro- Sir, that you will believe, that the motive which led me
position never
was negatived.

W. C. to make such an offer, could not be in any degree conceived to arise from other feelings, than that zeal which every man ought to feel to distinguish himself in his profession. I love mine, and I have the pleasing consciousness of feeling, that I have neglected no opportunity of qualifying myself to fill the path of duty with honor and credit. I have thus, Sir, stated, I trust, in an open and candid manner, how far I am concerned with regard to the manufacture of Rockets in India. The Honorable Court of Directors have declined accepting my services, and I have no other masters to offer them to. I trust, Sir, that the valuable opportunity of an introduction to you will not be lost to me, by the steps which my zeal urged me to take; for as I love my profession, I am sure as you do yours, in which you so much excel, and in which your name stands too high to rival. Aware of the great advantages of the introduction of Rockets into our armies in India, which gives them so valuable an increase of power, believe me, Sir, there is no officer in the Bengal Army, who will exert himself more

towards proving their advantages than myself. It is not by any means improbable, that I may be placed in the Rocket Troop, on my return to Bengal: and believe me, Sir, I shall receive any information which you may please to communicate to me, with an ardent desire of promoting the use of this most excellent weapon in India as generally as possible. Before I left India, a few only had been tried, under the superintendence of my particular friend, Capt. Campbell. I then saw the error of having the stick on one side, and had long before made some small Rockets with two, and some with three sticks, which ranged with great precision; the idea of which I took from the feather of a shuttlecock. The DEFLECT* however, with an ingenuity which could only have been expected from you, Sir, you have now completely overcome, and I beg to assure you, that I have not experienced so much delight for a long period, as during the exhibition last Thursday.

I beg your pardon for thus having intruded upon your time, it is my intention to proceed to Woolwich on Monday next, for two or three days, when should you have leisure, and deem me worthy of your attention, I shall most happily wait upon you, when it will be most convenient; and shall deem it a favor if you could oblige me with a line, directed to Captain Parlbj, 2, Bloomsbury Place, Bloomsbury Square.

An opportunity of gaining professional knowledge is never to be passed by; and I trust, Sir, no one estimates more highly the advantages which the kindness of your invitation, and that of General Cuppage, hold forth.

I am, Sir, •
Your most obedient Servant,
SAMUEL PARLBj.

P. S. I shall be obliged by your mentioning to me what day in next week will be most convenient to you.

A few days after the receipt of this letter, I happened by accident to go into the shop of Mr. Galloway, in Holborn, and there, to my utter astonishment, found out

Remarks.
This shews the extent of Capt. Parlbj's plans of improvement in 1818. W. C.
* Alluding to the stick being on one side, which I had remedied, by placing it in the centre, as was shewn to Capt. Parlbj, in the presence of several of the Directors, on Thursday, the September, 1817. And yet he now pretends to say, that I did not shew him my improvements in 1817. Vide also the Post-script to my Letter in reply to this. W. C.

that he was manufacturing Rocket Cases for Captain Parlb; in consequence of which, I wrote the following letter:—

W. C.

No. II

To Captain PARLB.

Remarks.

SIR, 13, Cecil Street, Strand, 6th Oct. 1817.

Since the receipt of your letter, I have discovered by the mere accident of going into a shop in Holborn, that you are proceeding in making War Rockets *without any communication thereof to me*, notwithstanding the professions of candour in your letter, and notwithstanding also the decision of the Court of Directors on this subject. This I own I was not prepared to expect, though somewhat surprised at the proposition you had made to the Court of Directors; and I feel therefore called upon to address you on the subject without delay. "

In the first place, I must state that I conceive the Court of Directors, in the high and honourable station they fill, *could not have come to any other decision than they have done*, in rejecting your proposition; and I am equally certain that the Governor-General, who has himself witnessed the labour I have had for the last fifteen years of my life, in bringing the Rocket system to perfection, and in making it worthy the adoption of an English Army in India, where though the Arm had been long known, it was too much despised, until I had improved and extended its power. I say, Sir, that under these circumstances I am certain Lord Hastings never could have attended, nor will attend, to any proposal, which not only, as it appears to me, is *unnecessary*, because His Army was already supplied with Rockets, but which, had it not been so, could not but have been productive of injustice and injury to me, besides other most serious consequences.

The world knows, that in the first instance I had succeeded in carrying the powers of this weapon to an extent, of which it had never supposed capable; and that I had established its importance by my own personal use of it in almost every part of Europe; that I

had succeeded in extending the use of it to India, by supplies sent out by me; that corps had been formed in Bengal and Madras for the use of these supplies, on the model and from instructions furnished by myself; under this view of the subject, therefore, I own I am quite at a loss to understand why any other individual, knowing these facts, should have conceived it necessary—*however great his zeal!*—to propose to supersede those services and that weapon, perfected by fifteen years of incessant experiment and practice, by any substitution, which could not have had the least test of practical experience.

Remarks.

But now, that by the entire change of the form, properties, and principles, of the Weapon, it may be said to cease to be a Rocket, even in name; and has therefore unquestionably become *exclusively* my own invention, and ~~property~~, I shall of course the more decidedly feel it a duty I owe to my own reputation and to the interests of my family, to guard it by every protecting power, which the laws and government of this country hold forth for the security of our talent and industry.

Viz. The placing the stick in the centre, with the vents surrounding it, and the firing through tubes, which I had perfected previous to 1817, though now so unwarrantably claimed by Capt. Parlbby.

W. C.

But, Sir, it is not merely on *private* motives that I feel called upon to object to your proceeding in this work, I must further state to you that I conceive it my duty on the most important *public* grounds to protest against it. I do not hesitate to say, that the *highest interests* of the Indian Empire require that the utmost jealousy should be observed with respect to the manufacture of the improved Rockets in that country; and the consequent danger of thereby betraying the secret of their construction to the natives, who from their familiarity with the weapon, though in a very inferior state, would be more susceptible of any such improvement in this manufacture than any other people.

Such was the feeling of the Court, and of Lord Hastings at that time.

W. C.

The India Company may indeed with safety reap the full benefit of these improvements in the field, by supplying themselves with them from this country, where the work is conducted without risk of such disclosure; but if they once permit individuals, who may have ob-

Remarks. tained partial information on the subject at home, to manufacture them at their own pleasure in Hindostan, and to be making useless and idle experiments with them (for what else can they be called, when the Indian Army is, as above mentioned, already supplied with the Weapon in the highest perfection) they are opening the door to the most serious and fatal consequence, and evidently without any advantage to the service

I am sorry to say, therefore, that I do feel it on all accounts my bounden duty to take such measures as may effectually prevent the dangerous proceedings, unless on this explanation you are satisfied of the propriety of not persevering in an undertaking at once so useless and so dangerous.

I am, Sir,

Your obedient Servant,

WILLIAM CONGREVE.

This Postscript was written within six weeks of my having shewn the improved Rocket system to him. I had then already seen but too much reason to suspect Captain Parlbys real intentions, from the discovery I had made in Mr. Galloway's shop.

P. S. You will I trust, Sir, at all events, without further remonstrance, have the goodness to abstain from making, or even disclosing to any one, any of the forms of construction, as well as the different modes of application, used in my Rocket, which were shewn you at Woolwich, I hope I shall not have occasion to add, too unreservedly the other day !! The Government has always, and with good reason, wishing to keep the exclusive benefit of the weapon to this country, as long as possible, been very jealous of exposing it to the public, and I have therefore always been extremely cautious. I leave you therefore to judge, how much astonished and concerned I was, to find the work going on in a public manufactory, by the direction of an individual, who had been admitted confidentially into the King's Works as an officer in his Majesty's Service, and under the protection of a great public body.

W. C.

No. III.

Remarks.

To Sir WILLIAM CONGREGVE.

SIR,

Boxted, Oct. 8th, 1817.

I beg leave to acknowledge the receipt of your letter of the 6th inst. and to inform you, that as you appear to consider it your duty on *public grounds*, to question my right as to the manufacture of War Rockets, &c. that I conceive it mine to lay your letter upon this subject before the Honourable Court of Directors, whose servant I am, and by whose *decision I shall most rigidly abide.*

I have the honor to be, Sir,

Your most obedient Servant,

SAMUEL PARLBLY.

No. IV.

To Captain PARLBLY.

SIR,

Woolwich, 11th October, 1817.

Your letter, dated the 8th instant, reached me at Woolwich last night, and in reply to it, I have only to say, that *I had anticipated* the intention therein expressed, by having previously transmitted your last letter to me, and mine to you, to the Court of Directors, accompanied by one addressed to them, whereof I have no hesitation in sending you a copy, so that you will perceive the Court are in possession of every feeling of mine upon the subject, public and private.

I am, Sir,

Your obedient Servant,

WILLIAM CONGREGVE.

P. S. To show you that there is nothing new in the idea of applying three or four sticks round the Rocket, I enclose you a Wood Cut, printed several years since, of a variety of different substitutes for the single stick. *I have long since tried them all, and found no good result; the one that I have crossed is exactly what you mention, on the principle of the shuttlecock; and, indeed,*

How rigidly he has abided by the decision of the Court or rather with what contempt he has treated it, his subsequent conduct here, I think, shows, after the refusal he met with in 1817, as to manufacturing War Rockets in India. W. C.

So much for Capt. Parlbly's improvements; even his three sticks had nothing new in them!!! Yet if they were capable of all

Remarks. *even if it would answer to guide the Rocket, the increased difficulty of carrying so many sticks, and of the precision he speaks of attaching them in the field, would be an insuperable objection to it; besides, if all those parts were not adjusted with the greatest accuracy, their effect would be much worse than a single one on one side, even if that stick were crooked.*

No. I. why has he not stuck to them, instead of adopting my construction?

W. C.

Vo. V.

To Captain PARLBY.

SIR,

13th Nov. 1817.

Having been informed by the Chairman of the Honourable East India Company, that the Court have disapproved of your taking to India any of the cases, apparatus, and other preparations, which you have made for the manufacture of Rockets, on the uselessness and danger of the measure, and that it is understood, in conformity to their desire, you have now only to say, *that any further information I can offer you as an officer of the Indian Rocket Corps, as to the use and application of the weapon, is much at your service.*

I am, Sir,

Your obedient Servant,

WILLIAM CONGREVE.

Subsequently to this, I received from Captain Parlby, the strongest assurance that he had, in consequence of the decision of the Court, abandoned all ideas of taking any of his preparations to India, or proceeding at all in the manufacture of War Rockets. That Captain Parlby, after such a Correspondence as this, should have persevered in inducing the Government in India to employ him in the manufacture of War Rockets, under the persuasion that the Court had sanctioned his proposal for this purpose—and that the improvements exhibited by him in 1823, were his own, and that but for Lord Hastings, these improvements would have been brought forward in 1815*—That

* The following paragraph appeared in the Calcutta Journal a few days after Captain Parlby's experiment in December 1823 :

"The state and service at large, can be no less interested on a practical question of this kind, extending, as it does, its importance to the

Captain Parlbv, after writing the letter, No. I. in this Correspondence, should have taken such a line, is indeed incredible. It is a fact, however, that in shewing ~~this~~ Correspondence in India, the letter No. I. ~~was never produced.~~

Had the true state of the case been known,—had the whole of this Correspondence been communicated,—I am confident the results would have been very different.

It is certainly a source of great mortification to me, that either Lord Amherst or Mr. Adam should for a moment have supposed,—and from the encouragement given to Capt. Parlbv, I must imagine this to have been their opinion—that the improved Rockets sent by me to India in 1820, could have been supplied by Capt. Parlbv in 1815, but for some undue influence exerted by me with the Marquess of Hastings, or from some undue partiality on his part towards me: yet such is the imputation which Captain Parlbv and his friends have suffered to go forth in Calcutta without contradiction. These insinuations must, however, no longer be permitted—the publication of this Correspondence must and will remove them, and justice will be done!

Had Captain Parlbv indeed fairly and truly stated, that he had adopted my improvements after witnessing them at Woolwich in 1817, and had he assigned as his reason for attempting to make my Rockets in India, the apprehension of their deterioration on the voyage, I should have had comparatively little to complain of, though even this would have been in direct violation of his pledge to the Court and to myself; but as the matter now stands, it is not only an attempt to deprive me of the merit of the invention, but to take the supply

science in general, and *our regret is proportionably awakened at knowing that the experiment, submitted so long back to our late Noble Commander in Chief as 1815, and before the Congreve Rocket had reached India, should not earlier have been put to the test.*"

Whether this was written by Captain Parlbv or by any of his friends I do not pretend to say, but at all events, he ought to have contradicted *such an imputation* against the Marquess of Hastings, conscious as he must have been, that in 1815, he knew *nothing of those improvements*, nor indeed until he had seen my practice at Woolwich in 1817, as proved by his own Letters.

out of my hands *most injuriously* to me, and at the same time without the *slightest foundation* as to any pretence of benefit to the service.

I have the honour to be,
Gentlemen,

Your faithful Servant,

July 11, 1821.

WILLIAM CONGREVE.

To the Chairman and Deputy Chairman
of the East India Company.

CONCLUSION.

Sir William Congreve, in his Appeal to the Court of Directors of the 1st February 1821, though he then had in his possession my letter to him, of the 6th September 1817, which he has now *printed and circulated*, wherein I stated that I had made an offer to Lord Hastings to make War-Rockets in 1815, and had renewed my offer to the Court of Directors in 1817, is pleased to say that I *first* proposed to the Company to manufacture his Rocket in India, *after* having been admitted by him into his Rocket Works, confidentially, and without reserve.

The assertion that I was admitted into Sir William Congreve's Rocket Works, is without foundation. *I never was in Sir William Congreve's Rocket Works in my life!*

If Sir William Congreve endeavours to represent the visit to Woolwich, with the Directors, on the 28th of August, as an *admission to his Rocket Works*, then I pronounce that it is an act of *duplicity*.

Those members of the Honorable Court of Directors who were present on the occasion, and Major Forrest also, will, I feel assured, support me in my assertion, that we did *not* enter into the Rocket Manufactory or any part of it, on the 28th of August.

Again, Sir William Congreve is pleased to say, that I made an offer to make *his* Rockets. My letter to Major

Doyle of 1815, and my letter to the Court of Directors, of 1817, decidedly express that the Rockets which I wish to make, are *different* from Sir William's.

Of the difference in the two constructions of Rocket, I have given a most decisive public proof, in the comparative trial at Dum Dum. The flight of my Rocket through the air is *similar to that of a rifle ball*. That Sir William Congreve's Rockets had *not* this rotary motion was perceptible to every spectator. Put to put the matter beyond doubt, I declare that it is impossible to make one of my Rifle Rockets from the case of one of Sir William's, without *considerable alteration*, and beg to refer the reader to the subjoined note.

* When Sir William Congreve's Appeal appeared in the Public Papers of Calcutta, I felt it incumbent on me to contradict the assertions contained in it, in a letter to the Editors of three Newspapers, a copy of which is given in the Appendix. In reply to a letter to Captain Graham, commanding the Rocket Troop, in which I had excused myself for introducing his name into the Newspapers, I received from that Officer the following assertion.—

"I can speak decidedly as to the different *internal* construction between your Rockets and those of Sir William Congreve."

The letter from which this is extracted, is dated Dum Dum, 30th September.

Whether my Rockets have one stick and several vents, or two or three sticks and one vent, I still by my *internal* construction preserve the rotary motion. Let Sir William Congreve produce his Rockets as they were made in 1815, at the time of my first offer to make Rockets in India; and then it will be *fair* in him to say,—Produce your Rockets *as you proposed in 1815, with two or three sticks*, and I will most willingly do so in any comparative trial, against *his 1815 Rockets*. But while Sir William Congreve has been employing all the means of improvement which the first establishment in England affords, for the intervening 8 years, and my experiments have been prevented, is it fair to say bring forward your proposed weapon of 1815, against my *improved one of 1823*?

Sir William Congreve in his Appeal is further pleased to assert, that *on his representing the case to the Court*, (of my employing an Engineer in London to construct Rocket Cases and Machinery,) that I was *forbidden* to proceed in my adventure.

I ask Sir William Congreve to bring forward his proof of this. It cannot be my letter of the 6th September, (now advanced as a proof of the Court's rejection of my proposition in the letter of the 24th July 1824,) because, fortunately, that letter was written *before* Sir William Congreve represented the case to the Court. It can hardly be Sir William's letter to me of the 13th November, because I distinctly informed Sir William Congreve, (after I had rejected his unhandsome proposition to inspect my Machinery, in my interview with him on the 18th of November) that the Court had *not decided against my adventure*, on the contrary, that the proposal had met with support from several of the Direction. But mistaken as Sir William Congreve must have been in the meaning of the Chairman's communication, whatever it might have been, if he had not been aware of his *mistake*, it would have been quite sufficient for Sir William Congreve to have requested the *prohibitory orders of the Court* to be communicated to me, and there would have been no occasion for Sir William Congreve to have demeaned himself by representing to me, while in his carriage, the weight of his interest at Carlton House, and with Lord Hastings, and the *injury to my prospects in India*, which might ensue from my persevering in my experiments with regard to Rockets.

But let Sir William furnish his *proof* that I was *forbidden to proceed in my adventure upon his representing his case to the Court*, for I deny the fact altogether.

With regard to the question as to economy, which Sir William Congreve has urged, both in his Appeal and in his

Letter to the Secretary of the Board of Control, in favor of making Rockets in England, and thus supplying the Honorable Company's Armies, I will answer it at once.

Sir William Congreve will allow, that the chief expence of a War-Rocket, is in the case, the shell, and the socket, which are all of iron. The composition he allows will be cheaper in India. Now, when it is taken into consideration that if the Honorable Company had their manufactories of Rockets at their three Presidencies in India; and that *in consequence* the iron cases, &c. may be used several times over for the practice of the troops, by refilling them, Sir William himself will even be obliged to allow, that at any rate Rockets for *practice* can be afforded much cheaper and more abundantly than they now are. As his Rocket cases, sockets, shells &c. after being once fired at practice, are perfectly useless; even the shells cannot be used again without a Rocket to project them.

Now I allow that there is a small, but important part of my composition, as I now form the Rockets, which I get from England (and I have by me enough for 30,000 Rockets), I will therefore allow the composition here, to cost me as much as it does Sir William Congreve in England, not more certainly. A very good Blacksmith may be got here, at less than 6*d.* per day, and the pay of natives for work of this description may be judged of, from the circumstance, that the workmen who work in the most dangerous part of the process of making Gun-Powder, in this Manufactory, receive only 8*s.* per month, valuing the rupee at 2*s.*

I suspect there is *sufficient proof* before Government, that the Rockets brought from England do occasionally suffer by the voyage, and if this is only *partially* the case, it vitiates that mode of supply. But supposing the Rockets are not injured by the voyage, still the Honorable Com-

pany may perhaps prefer having their *own Servant* and their *own Manufactory* for the supply of their *own Armies*. And if objections are raised on the score of employing the natives here in making them, I should be perfectly ready, if called upon, to establish my Manufactory in England.

Of the 12,550 Rockets which the Honorable Company have as yet been supplied with, at an expence of £ 9312 15s. in prime cost.* I know that a great number have failed, and in many instances have destroyed the apparatus from which they have been discharged, and wounded the Rocketeers; so that I am afraid the Honorable Company have as yet had rather a hard bargain of the Congreve Rocket, and that Sir William has been paid this sum for an *imperfect weapon*†.

In case the Rockets are made in this country, there is the freight of the sheet iron from England to be considered. I will put this down as *one-fourth* of the expence of the freight of the finished Rocket and their packages. As to the sheet iron, Sir William Congreve must be aware that the Honorable Company can purchase it as cheap in the market as he can.

* To this amount are to be added, the freight out; (if no insurance) risk of loss; the expence of applying the sticks in this country; the expence of Lieutenant Brooks's attempt to alter Rockets from one pattern to another, and of the Europeans sent out for this purpose; of the salary of the Inspector of Rockets appointed by Lord Hastings, to shew the Artillery at the three Presidencies *how to use them*!

† See various accounts of the failure of the Congreve Rockets in the Calcutta Journal.

See Colonel Blacker's account of the Battle of Mhedpore. See General Sir A. Campbell's letter to Captain Nicholson, of the 7th December 1822, given in the "Appeal," by which it will appear that a strong prejudice existed against the Rocket in the Madras Army, from the *inferior* nature of the Rocket used during the last war.

But there appears to me to be one unanswerable argument in favor of the Honorable Company establishing their own Manufactory of Rockets, whether here or in England. That (as Colonel Macdonald has stated in his "Reply") *the Honorable Court of Directors always feel a warm interest in military improvements made by their servants; the best and the only way to encourage their Officers in endeavouring to accomplish improvements, is to stimulate their zeal and industry by direct and honorable patronage.*

As to the services which the Congreve Rocket has as yet rendered to the Honorable Company, I am of opinion that Sir William rather overrates them. At the siege of Hattrass, many, if not most, of the Rockets which were fired *at the Fort*, either ranged far over, or flew wide to the right and left, while many others lodged and burnt out in the mud walls, without the least good result. One of the Rockets, I am informed, went through the tent of an Officer on piquet on the opposite side of the Fort; another rose perpendicularly from the Battery, and descended amongst our own Troops, and many other cases of their *error in flight* might be quoted.

The question in Sir William's Appeal to the Court of the 1st February 1824, of "how many lives, and how much labour might have been saved to the army, and how heavy an expence to the Company?" if the supply of those (inferior) Rockets had been greater than it was at that siege, is easily answered.

1. There were not above 20 casualties during the siege.
2. The siege lasted 18 days after it was invested.
3. If more Rockets had been fired, more expence would have been incurred.

The speedy reduction of that strong Fortress is to be attributed to the fine train of Artillery brought before it, and to the effective fire of numerous mortars. I appeal to

the Officers of the Army present on that occasion, and if any one individual will come forward, and openly express his opinion, that had a supply of Rockets been greater at Hattaras, either a saving of lives, of labour, or of expence would have accrued to the State; I will as freely publish his opinion as I now express mine.

My firm opinion is, that in the siege of the Native Forts of India, War-Rockets of the best description can only prove a very humble auxiliary to Artillery. In this case the fire is required to be directed (with the utmost precision which the science of projectiles can attain), at points and in certain lines; and the shells are required to be thrown within a very confined space. Are Rockets the means to be used? I answer, No.

But against an enemy in the open field, especially against Cavalry; in attacks by water upon an enemy by boats; in jungles; in difficult ground of any sort; in protecting and establishing posts; in crossing rivers in front of an enemy, either in advance or retreat, the Rocketeers being *with the advance* in the first case, and *with the rear* in the latter; in attacks upon an enemy's shipping, or fortified towns of considerable extent; or against the fire of Field Artillery, the War-Rocket may probably compete with any description of Ordnance, in the terrible effect of dismay and destruction which it is capable of producing. I have said against Field Artillery, and I repeat that I do not believe that any body of Field Artillery in the open plain could be successfully opposed to a comparative force of Rocketeers, as the destruction of their men, horses, carriages and ammunition, must ensue.

And now Sir William Congreve (as I shall take care that you are supplied with a copy of this number of my Repository), I will say a word to you in conclusion.

Had you answered my letter of the 6th of September, as most gentleman would have done; had you repeated your invitation to me to revisit your Repository; had you ever really admitted me confidentially and without reserve into your Rocket-Works, or had you, if any part of my conduct seemed to require explanation, asked for that explanation in a manly and gentlemanly manner, it is probable, most probable, that you would never have had it put to the proof in India, that “a Captain Parlbly,” of the Honorable Company’s Army, without a single practised assistant, without any other building to drive his large Rocket in than a small private room, about 12 feet wide, 16 feet long and 10 feet high, and without even the means of preparing the ingredients for his own composition, could equal, if not surpass you: at any rate surpass your 20 years’ experience, in producing Rockets acknowledged by all to be *decidedly superior* to yours in precision of range, and this in a public comparative experiment, with your own improved Rockets, before the Governor General and Commander in Chief in India, at the Head Quarters of the Bengal Artillery, and before many of the principal inhabitants of Calcutta. •

And further, Sir William Congreve, had you, in your “Appeal” to the Court of Directors, of the 1st of February, 1824, stated all the circumstances *fairly* and *truly*, and again, in your letter to the Chairman, of the 24th July, 1824, had you not brought forward my first letter to you, apparently as *new matter of accusation*, before a new Chairman and Deputy Chairman; but had you submitted it and your case for the *re-consideration* of the Court, and if you have not lost copies of my letters to you of the 17th Nov. 1817, and of yours to me of the 21st; had you printed them also, and had you been contented with successfully exerting *all your interest* in keeping my hands tied and my

Rocket Machinery unemployed, without endeavouring to *vilify* my character as an Officer and a Gentleman, before my Honorable Employers, and this by the *private circulation of a printed paper*, I should not have appeared against you, as I do this day, in *public print*, with a full confidence in the *integrity of my conduct* and of a *satisfactory acquittal* of all your unfounded accusations, from the verdict of a generous, impartial, and enlightened public.

SAMUEL PARBY, *Captain,*
Allahabad Powder Works, } *Bengal Artillery.*
 22nd June, 1825. }

POSTSCRIPT.

Sir William Congreve in his Appeal to the Court of Directors of the 1st February 1821, page 14, has asserted as follows: after mentioning the success of some practice with the improved Rockets at Meerut, he proceeds,—

“Similar practice, with similar results, was carried on at the Mount, Fort St. George, in the presence of the Commander in Chief, Sir A. Campbell, of an equipment of Rockets, made by me, and sent out to Madras in 1822, in consequence of the success of which, the Rocket Troop, which had been dismantled in 1821, for want of ammunition,* has been since re-established in its original scale.”

And again page 22, of the Appeal, Sir William writes,—

“The very appointment indeed of Captain Parby, which is the immediate cause of this Appeal, in the face of the restriction.

* I understood that the dismantling of the Madras Rocket Troop took place at the battle of Mahidpore, where the late lamented Captain Black, of the Madras Artillery, who commanded the Troop, was so disgusted with the imperfections of the Congreve Rockets, that he threw up his command, and requested that his men might be furnished with guns, saying that he would never risk his reputation again by carrying Rockets into action.

against it in 1820,* and the reasons now assigned for it, namely, *the want of sufficient supplies from England*, prove the growing confidence of the Indian Army in the weapon; and if any further argument were wanting for the establishment of *this fact*, it is to be found in *the late re-establishment of the Rocket Troop at Madras.*"

Now I have in my possession a letter from an Officer of the Madras Artillery, dated Mount, June 20th 1825, in which it is expressly stated, that in consequence of the *bad success* which attended Major Nicholson's Rocket Experiments at the Mount, that Sir A. Campbell would not hear of any thing in the shape of a permanent Rocket Establishment, and he adds,—

"We have nothing of the kind! to take care of the Rockets and carriages, and if necessary to fit out any equipment, we have a Captain at Head Quarters, who is called Superintendent of the Rocket Establishment, and he has a sub-conductor under him, *not another soul!* Previous to embarking for Rangoon some of our men were taught the exercise."

Hence it appears that Sir William's assertions on this score, and the arguments he would maintain, *that there is a growing confidence in the Indian Army in his weapon*, from the re-establishment of the Madras Rocket Troop, are totally without foundation. *

S. P.

* I am not aware what restrictions Sir William alludes to.

S. P.

ARTICLE III.

COL. MACDONALD AND CAPT. PARLBY.

ON DRIVING FUZES—COLONEL MACDONALD'S REPLY
TO MAJOR PARLBY.

To the Editor of the Asiatic Journal.

SIR,—If multiplied instances did not verify the fact, the following letter would alone evince the manifest utility of the ASIATIC JOURNAL, as constituting a ready medium of communication with India, highly calculated to promote scientific improvements, and the interests of the public.

Major Samuel Parlby, of the Bengal Artillery, has evidently been led away by an intemperate zeal, to print in his *Military Repository*, what is erroneous, to say the least of it. When in command of a corps of artillery in India, I constructed an engine for driving fuzes in a more accurate manner than can be effected by the *varying action* of the hand, a public comparative trial was ordered by the Military Board; and to prepare for it, Lieut. Grace was directed to get fuzes driven by selected men whose steadiness could be depended on; because the requisite number taken from those in the arsenal could not be hazarded in the trial. Major Parlby, it appears, had his accounts from General Grace, who would have denied so leading a circumstance had it been otherwise. The fact was as palpably known in Fort William at the time, as that I was very cavalierly treated by the commander of the artillery. Old officers now in existence can inform the worthy Major, that his printed assertions on this score are gratuitous.

I drove a certain number of 13, 10, and 8 inch fuzes by the engine, to meet an equal number by the *select drivers*: and the comparative trial took place in the arsenal on the 8th day of April 1788. Now, if Major Samuel Parly had printed the report of the Captains, my reply to it, and the rectification of an error in the report, he would not have printed that “the result was, that no advantage whatever appeared to be gained by Colonel Macdonald’s engine, the fuzes driven by the hand being, if any thing, found superior to those made by the engine; and in all cases burning longer than the latter, as they were found to do at Woolwich in the recent experiment.” In reply to these rash and sweeping assertions, take the following paragraphs from my letter to the Military Board, under date the 11th April 1788: “It appears, that out of 50 of my fuzes, 31 burnt in exact equal times. It appears, that out of 46 of the camp, or common fuzes” (driven by special process) “22 burnt in exact equal times. It appears, that the quarters of seconds above and below the greatest number of my fuzes that burnt even (of the various kinds used,) amount to 42, making the medium difference of the times of burning of 50 fuzes *less than a quarter of a second*. It appears that the quarters of seconds, reckoned in the same manner, respecting the common fuzes, amount to 88, making the medium difference of 46 fuzes half of a second nearly, or exactly. It appears, that the greatest difference in the times of burning of any of my fuzes, has been one second and a half in two instances only. It appears that the greatest difference in the times of burning of the common fuzes has been two seconds and a half; and one and a half and two repeatedly. It appears that my composition was quicker than that of the common fuzes. Slow-burning composition is liable to burn more inaccurately than more quick; as a proof, it may be observed, that the camp

10 inch fuzes, when charged with a slower composition, burnt more variously than the same filled with a quicker composition." The remark that fuzes driven by the engine burn a somewhat fewer number of seconds than those by the hand, is childish; because the *desideratum* is, that all fuzes of the same description should burn *in exact equal times*; it being easy to cause them to burn any required number of seconds by any of the following four expedients, *viz.* adding a few ounces to the driving weight—letting the weight fall through a somewhat greater space—giving an additional blow or by diminishing the mealed powder. The fuzes produced against those by the engine were unquestionably superior to the common run of fuzes not prepared with the well-managed care practised in the above instance; and however much it may offend the Major, I must still beg leave, to repeat, that prejudice, and want of interest, prevented the adoption of an improvement made out as above stated.

Such is a candid and brief account of what passed in India thirty six years ago. In the years 1815-16, an officer of distinguished services, Captain Sparks Byers, of the Royal Artillery, was on the staff of the Governor General. To promote the good of the service, and from motives of friendship, he constructed a model of the fuze-driver; and he writes—"I did not hesitate to lay before his Lordship a model of the instrument, who immediately did me the honor to sanction its construction, under my superintendence, in the arsenal of Futtyghur. The instrument was made without the slightest deviation from your plan and remarks; and after several experiments, in which every species of fuzes in the stores was tried, and compared with those driven by the instrument, I submitted to his Lordship a course of results most decidedly in favor of those driven by the instrument, and had the pleasure of

having it honored by his Lordship's unqualified approbation."

Now, peradventure, it so happens, that Major Samuel Parlbby gives us a very different account of this transaction, by saying, that Lord Hastings sent the model to Colonel Grace, with the proposals of Captain Byers; and that Colonel Grace, upon receiving it, laid before the Marquess of Hastings *his statement* of the experiment which has been made in 1787 (1788) under Colonel Pearse. The Major adds, that such was Colonel Grace's statement, as far as "the editor *can recollect*." The Major, or editor, does not inform us whether or not Colonel Grace made any experiments, or rested satisfied with the accounts (dissuasive of course) he gave the Marquess; and gets conveniently quit of a subject, to which he is not a little hostile, by saying over again, that "the experiments which were tried with the engine for driving fuzes have been unsatisfactory." While Captain Byers' account is perfectly clear, the Major's is so obscure as to leave the reader to *guess* whether the experiments alluded to are those of 1788, or more recent ones made by the Colonel, who *cordially disliked* the subject of the fuze engine.

Major Samuel Parlbby informs us, that Major General Grace communicated to him the circumstances of the experiments made by order of Government, and not of Colonel Pearse, who was pleased to remark publicly, that a young officer from Sumatra was come to instruct him in his duty. I was advised to wait on the Colonel on one of his public mornings, and such was my reception that I felt no inclination to repeat the visit. Major Parlbby now tells us, that in justice to Colonel Pearse, he makes public what "may, in some degree, act as a counter-statement to the assertions of Colonel Macdonald." The Major had no occasion to apply to General Grace, who, no doubt com-

mented on, amplified, and embellished, what can be had genuine only from the records of the Military Board, which furnished the quotations I have made above, in order to shew the Major, that in his future publications he must draw his information from sources that may secure him from assertion unsubstantiated by facts.

The author of the Repository finds it convenient and subservient to his views, to pass over in silence the very *decisive experiments* carefully made by so able and scientific an officer of Artillery as Captain Byers is generally acknowledged to be. I shall give one other extract from his intelligent letter, to shew that if the engine be not in full activity in India, it ought so to be, but cannot while such an *ex-parte* and misrepresenting *brochure* as the Military Repository endeavours, *con amore*, to clog its movements, and to excite prejudice against its progress and establishment, in the very teeth of successful experiment, a *third time* verified in this country. One would imagine that such a paragraph as the following would have had at least as much weight as the *unrelated* accounts of General Grace.

“ From the loss of a large part of my papers, I have not the experiments and date on which I founded the report laid before Lord Hastings. I regret this circumstance, as it prevents me from entering so freely into the merits of the subject as I could have wished. But, however, you will be pleased to learn, that before I left Futtyghur, instructions had been given for the machine to be sent to Cawnpore, in order to be used in the arsenal for the construction of others, and, I hope, its general adoption throughout the service.”

Major Parlbv's critique occupies nineteen pages of his Repository; but it so happens, that his own share of these scarcely amounts to four, the rest being occupied by a part

of the title page, and by letters copied from my work on *Artillery Instruments, on Fuzes, Projectiles, Military Improvements, and on the Present State of Telegraphic Communication, &c. &c.* From this it appears that the Major is not a little indebted to me for helping out his book; I shall point out to him how he may do a little more in this way, with requisite advantage to his editorial character, which must otherwise stand impugned for want of due attention to impartiality and candor. He commences with an extract from my work, in order to cut me up, as already animadverted to. Then are given, interspersed with no very flattering remarks by the Major, a letter from Captain Byers, written at my request, to enable me to lay its important subject before the Earl of Mulgrave, the Master-General of the Ordnance; a letter of acknowledgment to Captain Byers; a letter to the Court of Directors, who always feel a warm interest in military improvements made by their servants; a letter to the Master-General, explanatory of the general subject; a letter from Sir William Congreve to Lieut-General Farrington; a letter from General Farrington to the Master-General, enclosing a report made by four general officers and Colonel Millar, of the result of a comparative trial of fuzes driven by the engine and by the hand; and a letter to the Board of Ordnance by three major-generals, four colonels, and four lieutenant-colonels of Artillery, on a mode proposed by me, of causing shells to explode on coming in contact with the ground.

Having sufficiently adverted to what has past in India, it remains only to notice the complete success of the comparative experiment more recently made at Woolwich, in the presence of eminent men.

As some proof of the impression made by the above work, it is proper to give the following letter:—

Harley Street, May 16th, 1820.

SIR,

I cannot delay (until I shall have had an opportunity of reading your book) returning you my best thanks for putting me in possession of it; and for the very flattering terms in which you have been pleased to honor me, with the dedication of a work so interesting and so important.

I can claim no merit for my official attention to a subject which was in every way entitled to it, as well on the score of its public utility, as in consideration of the perspicuous manner in which it was by you brought under my consideration.

I have the honor to be,

With the highest esteem,

Sir,

Your most obedient and very humble servant,

(Signed) MULGRAVE.

Lieut. Colonel Macdonald.

Previously to a cursory notice of the proceedings at Woolwich, it becomes unavoidable to remark, that the editor of the *Military Repository* has, with views that cannot be mistaken, garbled my work, by printing letters and reports, *unaccompanied* by the *corresponding replies*. This is what is termed by reviewers (I acted long in that capacity without any partiality like this) a want of poetical justice. If the Major does not publish these replies in an early future number, he probably may experience the inconvenience arising from so very improper an omission.

My friend's (Sir William Congreve) rockets have remained unrivalled. These, and his multiplied military and other various most important improvements, rank him very high in the scale of public utility. Nevertheless, I deemed it necessary to reply to his observations elicited by my appearance before the *Select Committee* of old and experienced general officers at Woolwich. Sir William mentioned two fuze engines by distinguished officers; and it was proposed at the Committee, that they should be tried

against mine. This at least shewed that such inventions are deemed necessary, though we have as yet received no accounts of experiments made on fuzes driven by these engines, which I expressed a wish to the Committee to have tried along with mine.

It appears from the report made 26th May 1818, that "several fuzes of different natures were submitted to the test of *times of burning*." In these several trials, the whole of the fuzes driven by the engine burnt in *exact equal times*; and were not driven by me, as I went only once to Woolwich, to attend the Select Committee, in consequence of a communication from the Master-General of the Ordnance to General Fannington. On the proceedings at Woolwich, my present by no means formidable opponent, makes remarks as unjust as they are written in very bad taste. In the face of the above extreme accuracy of the effect of the engine, he is pleased to print, "that the fuze-engine has not met with more success at Woolwich than in Bengal." Nothing more strikingly proves the utility of an engine, than that, according to the report, fuzes driven with fewer blows than usual were found to burn in less time, because the composition was less condensed.

Aware that the Committee of General Officers would object to the engine, as requiring more time than the common mode, in a letter to the Master-General, being a reply to Sir William Congreve's paper transmitted to me, I anticipated this objection, by stating an obvious mode of driving half a dozen of fuzes *simultaneously* by means of the engine; giving it thus, *in time* also, a great superiority of effect. No advantage arises from a greater or less degree of condensation of the composition; nevertheless, as the report attaches consequence to this, it may be readily effected by a very small reduction of the size of the description of ladles I use, without any material increase of

time of operation: or an additional blow from the weight will produce the same effect. The fuzes produced at Woolwich were more accurate than those exhibited in Bengal; and were driven with *equal care* in a climate where the hand is little subject to a tremor liable to India. Not deeming the experiment with the *select* fuzes sufficient, I, as appears in the replies, urged having further experiments made with a *variety* of common fuzes driven by *different men*; but this was resisted, though no artillery officer who has turned his mind to this department of his profession, will assert, that fuzes taken from a mass in store will burn in exact equal times. The King of the Netherlands ordered his ambassador to thank me for the work from which Major Parlbv has extracted so much *on one side of the question*, and to inform me, that it was delivered to the Prince, his son, commanding the artillery. Fuze-engines are now in use in foreign arsenals.

The writer of the Repository, whose motto is any thing but *audi alteram partem*, most highly lauds the conduct of the Committee of General and Field Officers, who, in 1798, declined reducing to the test of experiment my proposed mode of exploding a shell on coming in contact with the ground; but chooses to *omit mentioning* that they very politely offered to attend me in a course of experiments, provided I produced at Woolwich all the requisite apparatus. The whole of this report is highly intelligent and liberal; and it states that they have "many simple contrivances for exploding shells upon their touching the ground." They attach no importance of consequence to such an invention; and the gallant Majors's pointed disapprobation of my plan must, in fairness and reason, go for nothing till it experiences a trial; in which I need not expect his concurrence, happen where or when it may.

In conclusion, the gallant officer who has attacked me as above narrated, publishes that "a slight examination of the contents of the above work (meaning my book on *Fuzes, Projectiles, and Telegraphic Communication, &c. &c.*) may not be unacceptable to the artillery branch of the armies of the three presidencies." This pledge remains yet to be redeemed, as no artillery officer can understand the subject in all its bearings, unless at least as much as I indicate, is, in fair justice, given to make up another number of the *Military Repository*.

Maugre the worthy major's wrath and indignation fulminated in no measured terms, I still humbly trust, that what I have done in some departments of military science may not be deemed altogether discreditable to the East-India Company's service, distinguished as much as any by science and professional repute.

JOHN MACDONALD.

P. S. In his future columns, the gallant Major will be pleased to inform us, what Colonel Grace did, in the way of experiments, on receiving from Lord Hastings the model, which, by the bye, seems to be the private property of Captain Byers, who, with his characteristic liberality, will, no doubt, permit it to remain in its present situation.

As the Major may, on reflection, say—"It is certainly reasonable, that I should publish, in my *Repository*, the *replies* whose omission is justly enough complained of, I am ready to make due reparation for this injury; but, on reference to his book, I find no reply to Sir William Congreve's report to General Farrington." True, there is no direct reply, because that report was *official* from the *comptroller*, who sent me a copy of it, and whom I informed, in the letter of the 13th June 1817, that on that account a reply should be made. This reply is appropriately made to Lord Mulgrave, the Master General, as appears in my work.

under date the 21st of June 1817, and in another of the same date, stating that I addressed his Lordship, in order that the reply might be laid before the Board of Ordnance, and the Select Committee, at Woolwich. A still more essential letter is that to the Master-General, dated 1st July 1818, being an indispensable reply in detail to the report of the general officers, which is printed in the Military Repository, because the publisher vituperates me, unaccountably, under a report which shews, *experimentally*, that *all* the fuzes driven by the machine burnt in *exact equal times*.

Lord Mulgrave's police note of the 7th of July 1818, the second report of the Major-General's, dated 15th September 1818, and my answer, addressed to the Earl of Mulgrave, under date of the 18th September 1818, cannot be omitted, in common justice to me, after the attack made so gratuitously by Major Parlbj, who, as a matter of course, will print the report of the Committee of 1798, on the subject of exploding shells; and my reply, through the channel of the Master-General, dated 17th October 1818.

Summerland Place, Exeter, 1st November, 1824.

Asiatic Journal, for Jan. 1825.]

REMARKS BY THE EDITOR OF THE MILITARY REPOSITORY.

For the satisfaction of our readers, ourselves, and we trust of Colonel Macdonald himself, we have inserted in our pages the above extract from the Asiatic Journal of January 1825.

We shall also add a few words of our own, by way of rejoinder; but we feel sorry that we cannot comply with

the wishes of Colonel Macdonald, by inserting any further extracts from his work on Fuzes, Projectiles, &c. &c.

There are several reasons for this omission. In the first place, we have not now by us a copy of the Colonel's book to refer to, and we are not sure that we could find one in the possession of any friend between this and Calcutta.

Secondly.—The Colonel has rather tauntingly told us, in his "reply" that we are already a little *indebted to his work for helping out our book*; and proposes to point out to us how we may obtain further assistance from his pages, for the same purpose.

Thirdly.—The Colonel has published a sort of *threat*, the *drift* of which we cannot understand; viz. that we may probably experience *inconvenience*, if we do not publish certain extracts from his book in an early future number of the Military Repository.

As to our first assigned reason for neglecting to comply with the Colonel's wishes; it might, probably, appear to many, that the parts of his work which Col. Macdonald wishes to have published in our pages, might be selected by a friend, or the publisher, in Calcutta, and so published in the forthcoming July number. But we really do not consider their publication in the least necessary for our own justification; and we beg to inform our readers, that when we left Calcutta in June last, there were many copies of the Colonel's work on Fuzes and Projectiles, for sale, at Mr. J. J. Fleury's library, No: 67, Cossitollah, where our readers, who desire information, have an opportunity, (if they still remain unsold) of purchasing the *whole* of Col. Macdonald's book; and thus we shall relieve ourselves from any future liability to a charge of partiality or injustice, in making any further selections from the Colonel's pages. Further, we shall feel extremely happy, if our present resolution leads to a more extended sale of the book.

in question, either to the ultimate advantage of the author, or that of the humble but industrious bookseller we have named.

As to the second reason, we trust that if the Colonel has fallen in with the successive numbers of our Repository, that he will have perceived that we have not wanted matter of interest and value, to fill our pages with; and that instead of the 150 pages for each number which we promised to our Subscribers in our original prospectus, we have given them in the 6 numbers already published 1202 pages, or the average of 200 pages to each number. The Colonel will be aware therefore, that the 19 pages allotted to his work in our first number, form a very small share of the grand total; and that his hint of further assistance (if seriously intended), will be of no advantage to us.

As to the third and last assigned reason, we really are at a loss to enlarge upon it, (so difficult is it to me with a subject beyond our comprehension!) and therefore we shall patiently await until the Colonel discharges his *wooden gun*, in order that we may ascertain what description of missile he purp^oses to hurl upon us.

Colonel Macdonald has been pleased to write in his "reply" that we have been "*led away by an intemperate zeal*" to print in the Military Repository what is "*erroneous*," to say the least of it. Something is required from us in answer to the charge of having put forth an erroneous statement.

As General Grace is deceased, we cannot obtain from him either confirmation or correction of our statement; and though Colonel Macdonald's may be strictly according to his recollection and impression of the circumstances, yet we still maintain that ours is that which was communicated to us by the deceased, without the least alteration as to the spirit or general meaning of his words.

But if the Fuze Engine is really so good a thing as the Colonel supposes it to be, it is singular that it has not been adopted either in Bengal or at Woolwich. Have all our Commandants been prejudiced against a *good invention*, the introduction of which into the service would have been attended with benefit to the service? We cannot allow such a supposition. It is well known that our humble voice has always been raised in favor of professional experiments. Be the subject under examination, good or bad, useful or useless, our opinion is, that experiments of this nature tend to keep alive that professional ardor, the encouragement of which is most desirable.

There is now a Select Committee of Artillery Officers at the Head Quarters of the Bengal Artillery, for the very purpose of professional experiment, and before whom we feel assured an impartial trial of Colonel Macdonald's Engine will be made, if it is thought again desirable; a trial which we shall be exceedingly glad to hear of, and so far from wishing to prevent it, beg to press the subject upon the attention of the Select Committee.

Colonel Macdonald has asserted in his book, that his Fuze Engine was "*in full activity in India.*" Now we cannot find out that it ever was in full activity, in any one Magazine in the Bengal Presidency; and it certainly is not in use here now. We trust some of our Madras and Bombay readers will inform us if it is or was in use with them, as the Colonel's opinion is, that "if the Engine be not in full activity in India, it ought so to be."

We have appeared before the Public as an Editor, of course the Public will judge us as they please, and have every right to do so; we cannot therefore find fault with Colonel Macdonald for having expressed his opinion of us and our writings, especially as he himself appears before the same tribunal, nor do we think it becoming in us to

prejudge the question, now before the Grand Jury of the Public, whether under all the circumstances of the case, Colonel Macdonald is right or wrong. It appears however in print (as the Colonel's opinion), that we have been *led away by an intemperate zeal*; that our *printed assertions are gratuitous*, and *rash*; our remark on the slower burning of the *hand-driven Fuzes*, *childish*; that the Military Repository is an *ex-parte* and misrepresenting *brochure*; that we have endeavoured to *clog the movements* of and *excite prejudice* against a Machine (which stopped before we ever heard of it); that our editorial character stands impugned *for want of due attention to impartiality and candour*; that we commenced our critique upon the Colonel's Book with an extract from the same *in order to cut him up*; that we have *garbled* his work; that some of our remarks are *as unjust*, as *they are written in very bad taste*, and that we have *fulminated our wrath and indignation in no measured terms*, (upon whom? what? when? where?) We fearlessly submit all these circumstances to the grave consideration of the Grand Jury.

We cannot avoid noticing Lord Mulgrave's note of the 16th of May 1820, which the Colonel in his "reply" has brought forward, for the purpose of proving the *impression* made by his book; and we must remark, that to our humble apprehension, it appears that this should have been brought forward in proof of the impression made upon Lord Mulgrave by the Dedication and Presentation of the work, and not in proof of the value of its contents, as unfortunately for Colonel Macdonald, his Lordship, it appears, wrote the note *before he had the opportunity of reading the book*, and we are therefore tempted to remind the Colonel (as applicable to books as well as letters) of Tony Lumpkin's opinion, that the *inside* of a letter is always "*the cream of the correspondence.*"

Allahabad, 20th May, 1825.

ARTICLE IV.

PROPOSAL FOR A BENGAL ARMY FUND.

To Capt. Parbby, Editor of the Bengal Military Repository.

SIR,

I beg leave to present to you for publication, the following rough draft of a plan, which has for its object the welfare of the Bengal Army.

1st. A monthly subscription to be raised as follows :—

Colonels,	Sicca Rupees	5	per mensem.
Lieut. Cols. and Members of Med. Bd.		3	„
Majors and Superintending Surgeons,		2	„
Captains and Surgeons,.....		1½	„
Lieutenants and Assistant Surgeons,		1	„
Ensigns and Cadets,		½	„

According to the list of the Bengal Army, as given among the papers relating to the Bengal Military Fund, the yearly amount of subscriptions would be 32,600 Sa. Rs.

2nd. That the money so accumulated be called the property of the Bengal Army, and be lodged in the Military Bank, subject to the control of 18 Directors, to be elected annually by the votes of all the Officers of the Army. The Directors to consist of 1 Colonel, 1 Lieutenant Colonel, 1 Major, 4 Captains, 8 Lieutenants, 1 Surgeon, and 2 Assistant Surgeons.

3rd. The funds to be applied by the Directors, when 2-3rds give their consent, in whatever way may appear most advantageous to the Bengal Army as a body. Among many other points, to which the Directors might direct their attention with this view, the following might be mentioned : Station Mess Bungalows and Public Military Libraries might be instituted at every large station of the Army, for instance,

Cawnpoor, Dinapoor, &c. Also a ready furnished House and Mess Room be constantly kept up in Calcutta for the use of all Officers who may resort there on account of health, or private affairs. Also Lodging Houses at the Cape, and other places frequented by Invalids, might be purchased and let at a low rate, or perhaps gratis, to all Officers of the Bengal Army going there on any account. Comfortable Budgerows might be purchased, and kept in constant readiness at the different stations in the river, to be furnished to all Officers of the Bengal Army, at very low rates. Cadets and Assistant Surgeons on first joining their Corps, and Officers on Sick Certificate, might be furnished with them gratis, &c. Many other cases might be mentioned, but the above are sufficient to point out the utility of the plan. It is possible that all may agree as to the utility of it, but for want of some specified mode of making their wishes known, the plan may fall to the ground, though of the greatest consequence to the welfare of the Army. I therefore propose that the Officers of the Army at every station, assemble, with the permission of the Commanding Officers, to give their votes upon the plan itself, and upon the persons to become Directors. That the Editor of the Bengal Military Repository, publish at once the whole of the lists received, for general information, and that the persons who appear to have the majority of votes as Colonels, Lieutenant Colonels, Majors, &c. be considered Directors for the current year. That at the end of the year each Officer deduct and remit to the Military Bank, for the benefit of the Bengal Army, the amount of his subscription for the preceding months.

Your most obedient servant,

A. B.

We shall be glad to see this plan discussed, or its practicability proved, by an estimate of the expence likely to attend the objects it proposes to embrace.

ARTICLE V.

ON THE NECESSITY OF IMPROVING THE
MUSQUET, &c. &c.

To the Editor of the Military Repository.

SIR,

1. Amongst the various improvements in the materials of war, it appears to me strange that the Musquet should have been so long neglected: how very inefficient it is, particularly in this country, may be seen by the calculation of the number of balls which take effect in action, and from the Target Practice, when not above one shot in ten strikes it at the distance of 100 yards, with the advantage of an Officer superintending.

2. This is attributable to three causes: 1st, the bad construction of the Musquet; 2, the badness of the Powder; 3rd, the inadequate instruction the Sepoy receives in the use of it. I have always observed, ever since I have been in the service, that 9-10ths of the Sepoys, instead of a steady lengthened pull upon the trigger, until the cock goes down, pull it with a sudden jerk, as they press the triggers of their own matchlocks; the consequence is, that the level of the Musquet is destroyed. This can only be remedied by a closer attention, and more ardent zeal for the good of the service, than I fear is generally to be found amongst us.

3. The 2nd objection can easily be remedied, and I must observe, that it is too often the case, that the Practice Ammunition is of such a bad quality, that every Musquet

hangs fire considerably; the consequences resulting from this are more serious than is apprehended: the Sepcys lose their confidence in their weapon, and in action become indifferent about taking any aim. I have heard them reply, "what is the use of doing so, my Musquet will not go off properly." The 1st objection cannot be remedied without a positive increase of expence, in the better construction of the Musquet; however I am inclined to believe this would be more than counterbalanced by the increased efficiency of the weapon, and saving of ammunition, for where one shot now takes effect, five, to say the least, would be destructive. The objections to the Musquets are, that they are too heavy, too clumsily and carelessly made, many of the touch holes so large, that the strength of the charge escapes through them, and others again so small, and imperfectly made, that the communication between the priming and charge is frequently destroyed entirely, and in others so obstructed, that it hangs fire considerably, and whenever that happens, the muzzle must be raised, and the shot lost. The locks are also very bad: most of the triggers are so hard to pull, that it is impossible, whilst making the attempt, to preserve the level of the musquet; and the springs are so weak, that there is neither force sufficient given to the flint in striking the hammer, nor resistance enough in the latter.

5. The flints too are miserable things indeed, made, one would suppose, by contract, and admitted into the service in the same manner.

6. The powder also is too coarse and bad, and so fouls the Musquet, that after firing 16 or 20 rounds, a Regiment could not discharge above 50 Musquets, until they had been cleaned.

7. I am thoroughly convinced that if the Musquet was rendered perfectly efficient, even by double its present

cost, Government would find their account in it, not only by giving additional confidence to the soldier in his weapon (which is much wanted), but also in its increased destructiveness. An enemy that now laughs at the fire of a Regiment of Infantry at two or three hundred yards, would either fly or fall before half that number. I would propose all the locks being made self-packing ones, a very simple process, which would save half the time now occupied in loading, and be particularly advantageous in all night attacks.

8. It is a well known fact that every Regiment in the service has a number of men, who, though not eligible for the invalids, in a long continued march, are unable, from age and infirmity, to keep up with it, and are obliged to be left behind by twos and threes, and their services lost; there are others also pretenders to inability who *will* not.

9. There are also many Officers who are incapable of active service, and some, who, when their Regiments are on service, are pressed over in its duties, which consequently fall upon the rest. Now to render the Army as efficient in all its parts, as the great scarcity of Officers will allow, I would suggest in lieu of some of the Provincial Corps, that Veteran Regiments should be raised from these materials, which would constitute efficient garrisons for all our fortresses, and be a more honorable retirement, than the Invalids, for Officers incapable of the more active duties of their profession.

10. I have always been a strenuous advocate for celerity of movement, combined with correctness; it appears, the system of double quick is about to be adopted. Why not carry it further? and by giving bugles instead of drums and fifes to the whole of the line, teach them the movements of Light Infantry; they would be much more efficient, particularly in such a war as we are at present engaged in, and

it would not take from their efficiency as troops of the line.

11. It might be a consideration also how far a Company attached to each Regiment armed with a sword, shield, and pistol, would be advantageous. I am inclined to think they would prove very destructive to an enemy once thrown into disorder, or running away, particularly from our scarcity of Cavalry, for in such a case the sepoys with their musquets and accoutrements, have no chance of coming up with them. They should have but few rounds of pistol ammunition, that they may the more easily be induced not to expend it, except in cases of emergency, when the sword should break, or they meet with an antagonist, whom they find more than a match for them with the sword. Perhaps the Grenadiers furnished with swords would render them more efficient than at present; in the Nepal war, a certain number of the men were allowed to carry swords.

12. I should also think that our 6-Pounders might be rendered much more destructive with chain, instead of round shot.

13. Should any of the above suggestions appear to you calculated to be of service, or tending to promote enquiry into the means of rendering the Army more efficient, perhaps you may give them a place, in some shape or other, in the Military Repository.

Your's very truly,

Kamptee, 30th September, 1821.

F. B.

Our correspondent F. B. has pointed out some original defects, which he supposes our musquetry to possess, as the chief causes of their inefficiency on service. But one who has perused his letter, asks if much of the bad condition of our Musquets may not be attributed to the want of efficient repairs with Corps and in Magazines?

Much care is certainly taken by the authorities in Europe, to send out to India, the best musquetry procurable, and most of those hereto-

fore imported are lighter than many in use with the King's Army. His Majesty's Forces have also (with exception we believe to the Foot Guards) adopted the Indian Musquet, which is made as light as the inspectors at Woolwich deem advisable. •

Much benefit might be obtained if the suggestion contained in the 11th paragraph of F. B.'s communication were adopted or modified.

We shall always be happy to hear from F. B., and regret we have been obliged for the present to postpone the insertion of an article on Tactics, with which he favored us, our Printer not possessing the types necessary to express some of his Mathematical Calculations.—
COMPILER. •

ARTICLE VI.

ON IMPROVING THE MODE OF FIXING
THE BAYONET, &c.

To the Editor of the Military Repository.

SIR,

If you deem the following observations worthy, pray give them admission in your July number.

Yours faithfully,
G. T.

That the Bayonet, as at present fixed, is liable to fall off, when coming down to the charge, or to be wrenched off by an opponent, must be evident to all military men.

It has indeed been acknowledged that some expedient for the string, which old soldiers generally use, is a desideratum.

During the Nepal war, the sepoy's unable to profit so much by their discipline, as they would have done in compact charges on the plain, found the musket and bayonet so unequal a weapon to oppose in single combat to the Ghoorkabs, that they endeavoured clandestinely to take with them their *tulwars*, and latterly ten men of each company were permitted to do so.

When General Smith's force went against the Arabs in the Gulph, the bayonets of his men were wrenched off by those sons of the desert, with one hand, whilst with their sword arm, they cut down their opponents.

When even on parade the soldier finds that his bayonet deserts him, his confidence in the hour of trial cannot be

great; if he successfully defends himself against one opponent, and bayonets him, the weapon will in all probability remain in the victim's body, and he be defenceless until he can resume it; if a push is made downwards, (from the parapet of a fort for instance) the bayonet almost always tumbles off.

Plans have from time to time been suggested, but either from their requiring alteration in the national weapon, or impeding its exercise, no method has hitherto been adopted.

In December last a plan was proposed, which though not acted upon, was favorably received, and commented upon.

It is extremely simple and efficacious, and since it need not be used on parade, or other occasions than actual service, need be no impediment to the exercise.

It induces no alteration in the bayonet now in use, excepting a small hole drilled through the socket rim, having a female screw, in which to insert a small male screw, to enter a catch made like a second sight, fixed on the right side of the musket barrel.

The screw, when the soldier is not before the enemy, may form an ornament on the breastplate, or be carried in pouch, or be secured into any part of the musket stock; and indeed should any objection be urged against the second sight, it might be dispensed with, and the same effect produced by making the nut screw revolve on the stock, with a shaft one or two inches in length, so as to be screwed into the bayonet rim, when about to charge; at other times into the equidistant hole in the stock. Conceiving that with some slight modification the screw plan may be matured, I have taken the liberty to submit for insertion in your valuable *Repository* this explanation of it.

Having thus for the first time put my pen to paper for the public eye, permit me to suggest, that when resort is

had to that always hazardous experiment of forcing the gates of Indian forts, the attempt after forcing the first gate should not be relinquished, because the gun cannot on its carriage obtain admittance to the other; let it be thrown off and carried through the aperture made by the first explosion, and being reloaded and placed against the next gate with a thick plank at the muzzle, supporting it, the discharge will have all the effect of a petard.

The plank should have a shaft in its centre to fit the bore of the gun. Previous to moving down, it would be easy to make up a small truck to carry the gun, and in that case the pole should admit of insertion in the gun, that the truck might be used at the muzzle to support the gun against the gate, and encrease the force of the explosion.

How is it that we have made such little use of that most noble animal—the Elephant?

He will kneel down to be yoked to a gun, and, proud of his employment, will, without any previous breaking in, drag a field gun with its complement of men the longest march, without any apparent exertion.

The elephant shafts should be precisely on the same principle as buggy shafts, care being taken to cause the chief pull to come from his back and body, by making the tension greater on the back strap and belly band, than from the shoulder strap.

Of all animals the elephant appears the best adapted for artillery draft.

On the Travancore coast no other is used in the timber agency. They drag the large trees from the hills to the canals, and afterwards pull the rafts along the back water to Alleppey and Cochin.

The larger elephants would drag our battering guns, and the smallest sized elephants are fully equal to our field guns.

The only objections to their employment that I have heard urged, are,

Their loss when shot or disabled,
And their aptness to take fright.

With regard to the first objection, there would be a proportion of spare elephants, and if the action became so hot, ammunition would be expended, and the ammunition carriage cattle might be yoked. .

As to their not standing fire, neither will horses until broken in.

When we used elephants with Colonel Adam's force, they were fed at the evening gun, and rushed into the smoke to get at their cakes—if the Mohout is willing to go on, the elephant will not mind a heavy fire.

A trial has been solicited, and it is hoped the result may obtain for the Artillery, the aid of this truly noble animal.

Dum Dum, }
1st August, 1825. }

G. T.

ARTICLE VII.

ON THE USE OF IRON GUN-CARRIAGES.

There are so many situations in India, in which the use of Cast-Iron Gun-Carriages would prove of the highest importance, that we cannot but express our earnest hope, that the circumstance will attract the serious notice of our Government, and that our Frontier Posts, as well as the Fortresses of Fort William, Delhi, Agra, Allyghur, Allahabad, Almōrah, &c. may be furnished with them, not only that effective carriages in all times and seasons may be in readiness upon the ramparts of those places, but because a due proportion of them will reduce the consumption of seasoned timber, which has lately been required for our Field-Carriages in greater quantity than the stores could supply.

The effect of this climate upon all wood-framing which is exposed to its violent alternations, is so rapidly destructive, that at this Garrison it has been the practice to keep almost all the guns dismounted upon the ramparts, for the purpose of preserving the carriages under cover, in buildings, the accommodation of which might be advantageously appropriated to other purposes.

We have been informed that His Majesty's Government have exported great numbers of these carriages to the British possessions in the West Indies, Gibraltar, Ceylon, the Isle of France, &c. and we are also informed that both at Madras and Bombay some hundreds are in use in the different Garrisons of those Presidencies. Why Bengal should still be in want of them we cannot assign a reason.

Objections have been urged, we are well aware, against their use, on the score of the brittleness of Cast-Iron generally, and that dangerous splinters are likely to occur from an enemy's shot striking them; but so perfect is the art of casting iron as now practised in England, that any objection on the first score is groundless; and we question much whether the splinters of a wooden carriage when struck by a large shot would not be more in number, and produce greater injury to the gunners than if the carriage was made of Cast-Iron.

There is one circumstance indeed to be considered (but it is not an objection of any force), that one shot striking an iron carriage would probably disable it, whilst a wooden carriage, under similar circumstances, might be less injured, and easier repaired.

It is sufficient however to remark, that so efficient have Cast-Iron Carriages been found in His Majesty's Service, that their proportion of supply has been greatly increased of late, and we have now the opportunity of submitting to our readers a report of a Committee of Officers of high rank and distinction, upon the subject, which has been kindly furnished us from Woolwich.

It appears that an accident occurred in Jamaica, from firing on broken stone platforms: this produced an enquiry, and the experiment took place, of which the following is the report:—

*Copy of a Report of an Experiment with Cast-Iron Gun-Carriages,
made at Woolwich, 9th April, 1824.*

PRESENT,

Lieutenant General Douglas,	|	Major General Millar,
Lieutenant General Cuppage,		Lieut. Col. Sir A. Fraser, K.C.B.
Lieutenant Colonel Sir A. Dickson, K. C. B.		

Woolwich, 9th April, 1824.

MY LORD DUKE,

I have the honor to report, that according to your Grace's desire, communicated in Lord Fitzroy Somerset's Letter of the 19th of March, that there should be a fresh trial of Iron Gun-Carriages, upon which entire reliance could be placed; the guns named in the margin were this day fired ninety rounds each, single shotted, with a charge of $\frac{3}{4}$ of the shot's weight, and ten rounds double shotted, with a charge of $\frac{1}{4}$ of the shot's weight.

32-Pounder 1	
24-Pounder 1	
18-Pounder 1	
12-Pounder 1	
<hr/> Total 4	

These guns were mounted on Cast-Iron Carriages, placed on reduced traversing platforms, having a greater than ordinary slope, thereby subjecting the carriage to a severer test than the ordinary firing. The guns were fired at the rate of eight minutes for each ten rounds for the 32 and 24-Pounders, and of six minutes and a half for each ten rounds for the 18 and 12-Pounders, and with no other interval than what was sufficient to examine the Carriages between each ten rounds. The Carriages stood this severe firing without the slightest failure, except the breaking of the stool-bed of the 32-Pounder, from the coin and stool-bed of that carriage not having been made of the improved pattern intended to be adopted in future, so as to prevent the coin from flying out.

This experiment has tended to confirm the Committee in their opinion that entire reliance may be placed on the efficacy of Iron Gun-Carriages.

I have the honor to be, &c.

(Signed) R. DOUGLAS,

*To His Grace the Duke of Wellington.**Director General F. T.**Allahabad, 13th June, 1825.*

We have the pleasure to state; that a very large demand for Cast-Iron Garrison-Carriages, was made from Bengal last year, upon the Court of Directors, and is soon likely to be complied with.—COMPLER.

ARTICLE VIII.

DETAIL OF PROFESSIONAL SUBJECTS

BROUGHT BEFORE THE

ARTILLERY SELECT COMMITTEE IN BENGAL.

To the Editor of the Indian Military Repository.

SIR,

Some notice of the Proceedings of the Select Committee of Artillery Officers in Bengal, may not prove unacceptable to your readers: the following details, which I have drawn up are therefore submitted by,

Your obedient humble servant,

The Compiler of the Bengal Sieges.

The two Officers of Artillery at Dum Dum next in seniority to the Commandant. The Principal Commissary of Ordnance. The Deputy Principal Commissary of Ordnance. The Model Master and Superintendent Tangent Scale Department. The Agent for gun carriages at Cossipore. Secretary, the Assistant Ad-

Early in the year 1821, a Committee of Artillery Officers, composed of the Members noted in the margin (permanently stationed at the Presidency), was established by Government, and ordered to assemble as occasion might require, to report upon any professional matter submitted for their consideration by His Excellency the Commander in Chief, or by the Military Board.

In constituting this Committee, Government was pleased to order, that no alteration in Ordnance Carriages, or articles of Artillery Magazine Equipment, should on any account be made, without being previously reported on by the Committee, to whom all such matters were ordered to be invariably referred, and in cases

jutant General of Artillery. where the Military Board might differ

N.B. The Interpreter from the Committee, a reference was

at Dum Dum has commanded to be made to Government.

since been appointed Secretary, vice the The attention of the Committee was

Asst. Adjt. General, particularly called to such measures as

who has been appointed a Member of the might tend to establish uniformity in

Committee, in lieu of the Ordnance Equipments, and the Com-

the Deputy Principal Commissary of Ord- mittee were recommended to avoid

nance. theoretical reasoning upon all points

susceptible of being subjected to the

test of practical experiment.

Charge for light 5½-inch Howitzer of 4¾ cwt.

The proper charge for light 5½-inch Howitzers, was one of the first points brought by the Military Board under the attention of the Committee. In consequence of a difference existing, in the capacity of the Chambers of Ordnance of this description cast in England, and in Bengal, respectively, the load or charge had, it appears, previously varied from 12 ounces to 1 pound 6 ounces. Serious injury had also been sustained by some of the Carriages (of Gribeauval's construction, with iron axle not bedded in wood) given to this description of ordnance, when subjected to the higher charges of 1½ lbs., and as it seemed desirable that one uniform maximum load should be given to Field pieces of this description, the Committee were, on the 20th February, 1821, called upon by the Military Board to determine what this charge should be.

After discussing the question, the Committee, on the 2nd of May, 1821, offered it as their opinion to the Military Board, that 1 lb. of powder should in future be the charge for all light 5½-inch Howitzers.

It has however been questioned, whether so very small a load of powder is sufficient to give an efficient velo-

city to shells, such as Shrapnells, which are not only $5\frac{1}{2}$ -inches in diameter, but when loaded weigh from 21 to 22 lbs.

A 24-Pounder Howitzer of 13 cwt. has lately been adopted in the British Artillery, of 4 feet $8\frac{1}{2}$ -inches long, with Gomer Chamber, and a reduced windage bore of only 5.66 inches; a drawing of this piece of Ordnance has been received in Bengal, from the Honrable Court of Directors, and the Select Committee have proposed, that six such pieces should be cast in the Foundry of Fort William, for eventual experiment at each of the three Presidencies.

We shall be glad to find so efficient a piece of Ordnance as this is, superseding the light $5\frac{1}{2}$ -inch Howitzer.

The only objection that has been started against the adoption of this piece of Ordnance in Bengal, is, its weight, which some consider too great for Six Horse Artillery horses, loaded as each is, with a rider. Eight horses are allowed in England, for Foreign Service, with this Piece, and the same number will of course be requisite in India.

Carriage for half-wrought materials, iron tools, &c. &c.

In consequence of the great inconvenience experienced by Officers on service with Field Batteries, at a distance from Magazines, for want of carriage for materials required for repairs, a model of a Cart for the carriage of half-wrought materials, &c. &c., was, four years ago, submitted by Captain Parlby (then Model Master) to the Military Board. This model was approved, and reported upon to the Board by the Select Committee, on the 26th March, 1821; but Captain Parlby's model has subsequently been laid aside, it having been constructed with reference to the French or Gribeauval Carriages, still in use throughout the Bengal Presidency. But the French Carriage having now

been superseded by the English or Royal Pattern Carriage, (which with some slight modifications, forms the standard pattern for all Field Carriages now constructed in Bengal) a Store Carriage for Field Batteries has lately been constructed, under the orders of the Select Committee, and approved of by the Board and by Government, having its beam or pole made to slide backwards or forwards, so as to form a cart, or (limbered upon a limber) a four wheeled carriage, at pleasure.

Hough's Shot and Shells.

The next point brought before the Select Committee seems to have been certain Shot and Shells cast in England under the orders and instruction of Mr. Surgeon W. Hough, of this establishment, on which the Committee made the following report to the Military Board, on the 11th May, 1822.

To Captain Cobbe, Secretary, Military Board.

SIR,

We have the honor to report, that in obedience to the instructions received through you from the Military Board, dated 26th March, 1821, relative to experiments to be made on the different kinds of Shells and Shot proposed by Mr. Hough for this service, a butt was constructed of the following dimensions, viz. a wooden wall of 20 feet long, 8 feet in height and 17 inches thick. A mud wall was also erected 10 feet in the rear of the wooden wall or target, 20 feet long, 8 feet in height and 4 feet thick.

2nd. We met on the 26th January (soon after the butt was reported ready), and made some experiments, a report of which is forwarded herewith. Circumstances prevented us from repeating on that day the experiments, which, altho'

unfavorable in their results, were not sufficiently so to warrant a rejection of the inventions.

3rd. Mr. Hough also appeared anxious that another trial should be made, and expressed his apprehension that his selection of Shells had been injudicious, in as much as he believed some had inadvertently been tried, which he hardly expected would stand the test, and consequently he was not surprized at their bursting in the gun.

4th. Another meeting was therefore proposed for the 11th of February last, which took place accordingly, and the result is recorded in a report also enclosed.

5th. Both experiments were conducted under the direction of Mr. Hough, as far as regarded the distance of the object and the quantity of powder for each round, the butt having been previously constructed in conformity with dimensions given by him.

6th. We regret that we have not been able to discover any advantage likely to accrue to the service by the introduction of Shot or Shells similar to those submitted for experiment by Mr. Hough. We are however inclined to believe that if shells of a cylindrical form, like those of Mr. Hough's invention, were made thicker, and thereby rendered capable of sustaining the shock when fired from the piece, they might be advantageously employed in lieu of "Shrapnell Spherical Case," because they would be capable of containing a greater number of balls and of equally maintaining the direction given on leaving the gun; but the number of rounds for each piece of ordnance must of necessity be reduced if this kind of ammunition were adopted for land service, in order to regulate the weight to be drawn by the means at present allowed: we would however wish the final decision on this point should be postponed until we have a course of experiments on a much more extensive scale with Shells cast for that purpose, fired

against a butt much larger than the one which has been made.

7th. We feel disinclined to enter on a more extended course of experiment, involving considerable expence; but should the Military Board consider Mr. Hough's "Case Shot" to possess the superiority assigned over "Shrapnell Case," and a consequent proportional destructive effect, it would be important to verify these conclusions by a satisfactory course of experiments.

8th. In conclusion, we beg to add that the number of Cylindrical Shells presented to us by Dr. Hough, were too limited to admit of experiments being made to determine the effect which ammunition of that nature is likely to produce if used in the Navy as shot against shipping; we can therefore only remark, that from their form they appear likely to do greater damage to shipping than round shot; but a course of experiments might be carried on should the Board deem the investigation of sufficient importance to induce the expence. The effect of such shot *should* be greater than that from round shot, "provided they can be equally well directed, and be found to impinge with velocities proportionate to their masses and charge: these are points worthy of experiment, but the means must be more ample than Mr. Hough could or would be expected to provide.

**EXPERIMENTAL PRACTICE WITH MR. HOUGH'S SHOT AND CASE IN COMPARISON
WITH THOSE IN PRESENT USE.**

Dum Dum, 26th January 1822.

Nature	No. of rounds.	Powder.			Shells.			Flight.	Length of fuse.	Block targets dis- tance.	Curtains.			Diameter of the bore.	Weight of the gun.		Remarks.
		Quality.	Burning.	Charge.	No. of cartride balls in each.	Empty.	Filled.				1st Distance.	2nd Distance.	3rd Distance.		cwt. qr.	lbs.	
12-Pounder Iron.	4	15	on	22	0	14.13.4	15.12.4	0	0	0	500	0	0	4.677	34	0	Struck the target and bound- ed off.
Mr. Hough's mine	1	15	on	22	0	14.13.4	15.12.4	0	0	0	500	0	0	4.677	34	0	Struck the target and bound- ed off.
Mr. Hough's cylindreal case.	1	4 1/2	on	22	0	9.12.6	18	0	4-10	0	500	550	600	4.077	34	0	[the curtains, } Burst after passing thro' }
Mr. Hough's cylindreal case.	2	4 1/2	on	22	0	9.11.8	18	0	3-10	0	500	550	600	4.677	34	0	Burst in front of the cur- tain.
Mr. Hough's cylindreal case.	3	4 1/2	on	22	0	9.13.0	18	0	3-10	0	500	550	600	4.677	34	0	Burst in the gun.
Mr. Hough's cylindreal case.	4	4 1/2	on	22	0	0	0	0	0	0	0	0	0	0	0	0	
12-Pounder Iron.	1	15	on	22	0	16.3.8	0	0	0	250	0	0	0	4.667	34	0	Burst in the gun.
Mr. Hough's cylindreal case.	2	15	on	22	0	16.3.8	0	0	0	250	0	0	0	4.677	34	0	Burst.
Mr. Hough's cylindreal case.	3	15	on	22	0	16.3.0	0	0	0	250	0	0	0	4.677	34	0	Lodged in the target.
Mr. Hough's cylindreal case.	4	15	on	22	0	15.14.0	0	0	0	250	0	0	0	4.677	34	0	Ditto.
12-Pounder Iron.	1	12	0	3 lbs.	0	0	0	0	0	250	0	0	0	4.077	34	0	Over.
Mr. Hough's cylindreal case.	2	12	0	3 lbs.	0	0	0	0	0	250	0	0	0	4.077	34	0	In the butt.
Mr. Hough's cylindreal case.	3	12	0	3 lbs.	0	0	0	0	0	250	0	0	0	4.077	34	0	In the butt.
Mr. Hough's cylindreal case.	4	12	0	3 lbs.	0	0	0	0	0	250	0	0	0	4.077	34	0	In the butt.

* 1st curtain pierced with 53 balls and 1 splinter.—2nd do. 43 do.—3rd do. 41 do.

Sir Howard Douglas' Gun Locks.

This was the next subject brought before the Select Committee, and the following is their report thereon.

In conformity with instructions under date 20th February, 1821, received from the Military Board, the Select Committee of Artillery Officers met for experiment at Dum Dum on the 26th March, 1821.

The object of the meeting was to make such experiments as would enable the Committee to report upon the advantages to be derived from the use of the new Gun Locks for ordnance, invented by Sir Howard Douglas. These Locks were tried, attached to the undermentioned pieces of ordnance, viz.

One 32-Pounder, iron, charge 10lbs.

One 24-Pounder, iron Roebuck, charge 2lbs.

One 8-Inch Howitzer, brass, charge 1lb. 12oz.

The annexed report will show in detail the number of rounds fired from each piece, and the number of times the flints missed fire, and when priming powder or tubes were used.

The circumstances of the Lock of the 32-Pounder having broke at the 8th round, and of its having previously missed fire five times, are certainly very unfavorable.

The 24-Pounder in 13 rounds missed fire five times.

The 8-inch Howitzer in 12 rounds missed fire 19 times.

The Locks attached to the 8-inch Howitzer and the 24-Pounder sustained no injury from the experiment, the charges however were small.

Little dependence can be placed on these Locks, from their having missed fire so frequently. The Committee therefore is of opinion that no real advantage is likely to accrue from their admission into the service, even with battering guns.

The Committee cannot with such results before it coincide in opinion with Sir Howard Douglas, on the uncertainty of Match, when compared with the Locks under remark, which are so liable to miss fire.

In batteries during the night, port-fires are seldom if ever used, and the light of a slow match is hardly discernible at any distance : having once fired a gun from a battery, an active enemy will not require the aid of a match to direct him where to fire at. The Committee, judging from the experiments, is of opinion that the introduction of the Gun Locks with Field Pieces would be detrimental to the service, if intended to be used in firing the gun, and if merely for the sake of saving slow match, or the carriage of it, the Committee conceives that the end to be obtained is of so little importance, that the expence of the Locks would outweigh all advantages.

The following matters have come under Report by the Select Committee, and are promised to be touched upon in our succeeding numbers by our contributor, the Compiler of the Bengal Sieges :—

Charge for Siege Ordnance.

Mr. Hough's Gun Carriage.

Mountain Gun Carriages.

Field Brass Ordnance Carriages, Royal Pattern, adopted in Bengal.

Siege Ordnance Carriages, and Mortar Beds.

Number and Nature of Balls for Case Shot.

Chambers of Mortars, Gomer, Cylindrical, &c. &c.

Parlby's Screw Vents.

Cast-iron Nave Boxes.

Lieut. Aitchison's Fulminating Tubes.

Windage of Shot and reduction of the bores of Guns cast in Bengal.

Brass and wooden Naves.

Stores for Field, and Siege Ordnance Equipments.

Dimensions of Guns cast in Bengal.

Proof Regulations, and allowance of excess, or deficiency to standard Gun dimensions.

Tangent Scales.

Guages high and low for Shot and Shells.

Parlby's Double Screw for Elevating Ordnance.

Parlby's Mortar Platform.

Wood for Gun Carriage Beams in Bengal.

Method of fixing shot to bottoms without straps.

Harness and Breechings for horse draft.

TABLE OF EXPERIMENTS ON GUN LOCKS WITH ORDNANCE, MADE BY THE SELECT COMMITTEE.

March 28, 1821.

	1st round.	2nd round.	3rd round.	4th round.	5th round.	6th round.	7th round.	8th round.	9th round.	10th round.	11th round.	12th round.	13th round.
	Europe. Tubes.	Europe. Tubes.	Country Tubes.	Country. Tubes.	Country. Tubes.	Prime Powder.	Prime Powder.	Priming Powder.	Priming Powder.	Priming Powder.	Priming Powder.	Priming Powder.	Priming Powder.
32-Pounder, iron, charge 10 lbs.	tk. fire	tk. fire.	missd once	missd once, Tube bad.	missd once.	tk. fire.	missd twice.	Lock broke, and became useless.	tk. fire.	tk. fire.	tk. fire.	discon-tinued.	discon-tinued.
24-Pounder, iron, Roebk. charge 2 lbs.	tk. fire.	tk. fire.	missd once with Europe Tube and thrice with country Tube.	missd once.	missd once.	tk. fire.	tk. fire.	took fire.	tk. fire.	tk. fire.	tk. fire.	tk. fire.	tk. fire
3-inch Howitzer, brass, charge 1 lb. 12 oz.	missd tk. once.	tk. fire.	missd once	tk. fire.	missd thrice, used the rear lock.	used the de-fective fint again.	missd once, the priming was not set.	tk. fire.	tk. fire.	tk. fire.	tk. fire.	missd 7 times used port fire.	used port fire.

ARTICLE IX.

TRANSLATION OF AN ARTICLE HEADED
ARTILLERY,IN THE NINTH NO. OF THE BULLETIN DES SCIENCES
MILITAIRES.

The following extracts translated from the *Bulletin des Sciences Militaires*, published at Paris by the Baron de Ferussac, having been sent to us by the Compiler of the *Bengal Sieges*, with a request that they might appear in our *Repository*, we have admitted them at his request. We shall defer to a future number, any remarks we may have to offer on the subjects these extracts touch upon.

*Series of questions submitted for discussion to the Artillery
Schools in France.*

The Royal Corps of Artillery in France, so justly celebrated for the skill of its Officers, and the beauty of its material, has not remained idle, in the midst of the efforts made during the last ten years, by neighbouring nations, for the perfection of that branch of the military service.—Enriched by observation and experience in the late wars, its ancient Pontoon Equipments, which were heavy and incommodious, have been abandoned for others of a lighter description:—the manufacture of Gun-Powder has been improved; the service of the Arsenals better understood, and important changes in the manufacture of Ordnance, and Gun-Carriages, are under trial; but all this was effecting but little, it was necessary to improve the various branches of that arm, so as to keep pace with the progress made in the arts and sciences, from

which they borrow assistance. It was with this view, doubtless, that the Duke of Belluno sent, last year, to all the Artillery Schools, a series of secondary questions, to be submitted for discussion at their meetings, and that the Marquess of Clermont-Tonnerre, ordered, that all memoirs, remarks, experiments, theories, and new inventions, should be henceforth registered in the *Artillery Records*.

Conceiving it will prove interesting to foreigners, we give here the series of questions which are now under discussion in the Schools of France; and undertake to publish all the interesting memoirs which may appear on these subjects.

1° *Of theory compared with practice in the discharge of ordnance in use.*—To explain the differences remarked between the results of theory and those of practice, by considering in detail the reciprocal partial influences.

1°. Of the length of the bore of the gun;

2°. Of the caliber;

3°. Of the species of projectile, solid or hollow;

4°. Of the charge of powder;

5°. Of the form of the chamber which receives the charge;

6°. Of the direction of the axis of the gun relatively to its carrying correctly to its object;

7°. Of the windage and vent of the gun, &c. &c.

To establish from these discussions, maxims practically true, or to which some confidence may be given on actual service.

2° *Of the methods of ricochet* firing.*—To discuss in general, the ricochet fire; and in particular, the cases where it may be proper to extend the ricochets more or less to effect the end proposed.

* Duck and drake.

What experiments will require to be ordered in the school polygons, to arrive at a complete solution of this question; or what will be the best means of conducting without much expence, such experiments in ricochet firing, as are adapted to all cases that may present themselves on actual service.

3°. *Of the instruments for aim or pointing.*—To discuss and compare the different kinds of scales for pointing guns, that of Gribeauval, that of Lombard, &c. Will it be useful to have a negative scale, that is to say, an instrument to aid in pointing when the visual line passes beneath point blank, and with reference to the affirmative or opposite case, how a scale of this nature may be procured, simple and of easy use? To discuss the utility of the divisions marked upon the scales, and to determine after what principles they ought to be established. To examine the different kinds of quadrants proposed successively for mortars and howitzers, to show their advantages and inconveniences, and to conclude in favor of an instrument, simple, solid, correct, and easy of use.

To examine into what has been proposed at different periods for pointing guns in firing by night, and to determine what is best to be done in this case of practice.

4°. *Of the gunner's compasses, proposed by Mr. Döbenheim.*—To seek the means of rendering this instrument common, either by the simplification of its form, by the reduction of the number of scales, or by any other method.

5°. *Of port-fires.*—To examine and discuss the means of setting fire to the charges of pieces of artillery, such as the slow match, the quick-match and tube, the port-fire, the gun-lock, &c. &c. To examine if, in the state of knowledge acquired in this branch, it will not be expedient to modify or to change the ordinary practice in the different cases of service.

6°. *Of hollow projectiles.*—What is the influence of the bottom in shells and other hollow projectiles? Ought the bottom to be retained or an eccentric space be left? Is it necessary to make in this respect a difference between shells thrown with small velocity and those discharged with considerable force, &c?

7°. *Of grape and case shot.*—To describe these from their origin, to those in use at this time. To discuss the question of the employment of cast-iron balls; that of the arrangement of balls in a case; that of the matter and form of the case and its bottoms; that of the number and the most advantageous size of balls, which ought to be admitted for filling the cases of the different calibers, and how the balls should be arranged or disposed among each other, &c.

8°. *Of the envelopes of charges.*—To discuss every thing concerning paper and serge cartridges, and bags for siege and field ordnance, their material, their form, their relation with the cartridge-pouch, their connexion with the shot bottoms or wads.

9°. *Of drag-ropes and equipments.*—What are the ropes and equipments necessary for the service of guns, such as hand-spikes, spunges, rammers, purveyor's-bags, lanthorns, thumb-stalls, &c. Are these well understood generally and particularly? What are the improvements of which each is susceptible?

10°. *Of field manoeuvres.*—To discuss the principal questions which the service of field ordnance presents; that of the choice of position, in actions; that connected with the fire in advance and in retreat, on the prolonge or otherwise; that of the combinations of artillery with battalions of infantry, with the cavalry, &c.

11°. *Of military bridges.*—To discuss our system of military bridges; if there be not useful changes required

in our wharves, and boats; and in the drays, and carriages which serve for their transport; to establish a comparison between our system and those of foreign powers, &c.; to discuss the different projects for bridges upon wooden supports, upon casks, upon chains, and rope, &c. &c. To treat of the questions which relate to the choice of the most convenient points for the establishment of bridges; of those where it is necessary to establish artillery for their protection, and to discuss the principles relative to the establishment and arming of *têtes de ponts*, &c.

12°. *Of cannon in general.*—To discuss every thing which relates to the most advantageous construction of cannon; to make known the bases, and the principles upon which have been determined successively the interior forms, the lengths, the calibres, the thicknesses of metal, the position of the trunnions, of handles, of the vent, the form and the length of the bore, &c. of every cannon, and what modifications are required to be made in those actually in use in France.

13°. *Of the casting of cannon.*—To show what are the metals and alloys employed hitherto in the different states of Europe for the casting of cannon; what are the reasons which have made them be successively adopted, and what improvements should be established in France in this process. To examine if, in the actual state of metallurgy, applied to the working of iron, it will be proper to propose to introduce iron ordnance for the land service of the artillery, and whether for the equipment of garrisons or for battering and field trains, and in what proportion it will be proper to admit them. To discuss the construction of cannon where it is proposed to unite several heterogenous metals one over the other; for example, a body* of iron covered with brass.

14°. *Of the reception of cannon.*—To discuss the different proofs to which cannon have been submitted successively

at their reception; to examine if those actually in use in France entirely fulfil the end which is proposed by them, and to point out the improvements which may appear useful in this essential branch of the service. To discuss the instruments of verification employed hitherto in the reception of cannon, and to point out the improvements of which they appear susceptible.

15°. *Of powder eprouvettes.*—To discuss and compare the means proposed and in use for proving war-powder, viz. hand eprouvettes, a *cremaillère*, *hydrostatiques*, *pendule*, *à globe*, &c.—To examine if it will not be proper to have them of different kinds to obtain comparative results, as to the effects of different powders in different arms.

16°. *Of field gun carriages.*—To compare the plans of the carriages, proposed or followed at different times, the plans contained in the tables of Gribeauval, that of the year 11, that of 1809, that of the arsenal of Strasbourg, &c. and to propose an approved plan.

17°. *Of garrison and coast artillery carriages.*—To discuss the projects proposed or adopted to elevate a piece of garrison or of coast artillery, so as to fire over a parapet without embrasures. and to prepare an approved plan of a garrison or coast artillery carriage.

18°. *Of mountain trains.*—To examine what has been proposed up to the present period, for the transport of artillery in mountainous tracks, and to conclude in favour of a project for mountain Artillery, which may be suitably adapted to such mountainous countries, as, it may be presumed, may hereafter be the theatre of our wars.

19°. *Of waggons and other means of transport.*—To examine and discuss every thing which relates to the transport of powder and other ammunitions in field campaigns; that is to say, ammunition waggons of four wheels, carts, &c. and to discuss the question of draft, of turning, of locking, and of the greasing the wheels of artillery carriages.

20°. *Of store proportions.*—To establish on solid basis the theory of store proportions, and to make its doctrines well understood, by applications and particular examples, that may be obtained from approved projects of some proportions.

1°. For the defence of a given place ;

2°. For a siege-train destined for the attack of a given place.

REPORT ON THE POWDER MANUFACTURED AT THE ESTABLISHMENT OF BOUCHET.

Translation of a Report made to his Excellency the Minister of War, on the Powder manufactured at the establishment of Bouchet, taken from the 8th vol. of the Bulletin Universel for the year 1824.

MY LORD,

By the letter you did us the honor to write, dated the 22d Nov. 1823, you directed us to examine the new powder fabricated at the establishment of Bouchet, and to compare it with the best powder that could be procured from foreign manufactories.

To fulfil your wishes, we considered it our duty to proceed in the following manner:—

1st. We visited the establishment of Bouchet, in order to observe all the process of manufacture practised there, and to take from its magazine the quantity of powder required for our experiments, and made, in some measure, under our own eyes.

2nd. As it is certain that the best foreign powder is manufactured in England, we requested your Excellency to have the goodness to place at our disposal, ten kilogram-

mes* of English sporting powder, of the best quality, and recently manufactured. This powder, selected by the French Ambassador, was imported by M. Le Chevalier de la Rouzière, capitaine de vaisseau. It was received in the best possible state, was stated to have been manufactured on the 9th of January; and was of the kind known in England under the name of Dartford Powder.

3rd. The powders were tried by the *fusil-pendulum* and by Regnier's hand *eprouvette* with small chamber.

4th. We endeavoured to discover which soiled the fire-arms least, or left the least dross or foul residue.

5th. Lastly, we determined the quantity of water, which they absorbed when placed in contact with damp air; their density; their friability, and the proportion of their constituent parts.

Establishment of Bouchet.

We went twice to Bouchet, and were both times conducted by M. Lefebvre, *chef de bataillon d'artillerie*, who directs the works in the most creditable manner: we inspected the establishment minutely in the greatest detail. Hitherto they had manufactured little but sporting powder.

The salt-petre and the sulphur are of the same kind as in use at other manufactories; but the charcoal is different: this is made from the *bourdaine*, (frangula or black-adder) calcined in a close vessel, according to the statement of the process of manufacture and the description of the machines employed in the establishment.

They work only upon small quantities of powder in each mill; the operations are carried on without interruption, and this, without any regard to the state of the atmosphere; consequently they are not encumbered, nor is too great

* Ten kilogrammes are about 22 lbs. avoirdupois.

a mass of materials collected in any one of the mills. We remarked that all the mills were very small, that each sort of operation had an isolated building serving as a depôt, that all the buildings containing explosive substances were at a distance one from the other, and separated by banks of earth planted with trees; there is therefore every reason to hope that by this system, the chance of explosion is diminished, though not entirely destroyed, and that there never will happen similar catastrophes to those which have entirely destroyed some of our powder manufactories.

Experiments by the hand epreuve upon equal quantities of powder.

We deemed it our duty to compare the new powder of Bouchet not only with English powder, but also with the French powder of Maromme, for the manufacture of which picked charcoal, pounded by pestles, and pressed by the hydraulic press, is used.

Tials.	Powder of Bouchet.	English Powder.	Powder of Maromme.	Observations.
1st,	22 0	20 8	17 0	Generally, powder from other manufactories, only give at most 16 by the hand epreuve.
2nd,	22 0	20 1	17 8	
3rd,	21 3	20 2	18 0	
4th,	22 0	20 1	16 1	
5th,	21 0	20 0	17 8	
Average, 21 76				20 24 17 34

The difference therefore between the strength of the powder of Bouchet and the English is 1,52. The real difference is not however so great, as the English powder, is less dense than the French, in the proportion of 857 to 905; but even taking the density into account, the advantage of strength is in favor of the French powder.

*Comparative Experiments made with the fusil-pendulum
with a charge of five grammes.**

Bouchet Powder.				English Dartford Powder.			
Recoil by the fusil-pendulum.		Recoil by the counter-pendlm.		Recoil by the fusil-pendulum.		Recoil by the counter-pendlm.	
8'	25'	0"	213 millim.	8'	30'	6"	210 millim.
8	38	18	219	8	30	18	212
8	33	0	219	8	38	18	216
8	33	0	218	8	33	0	212
8	26	6	214	8	27	0	211
40	161	24	1074	40	158	44	1061 total.
8	32	16	214,8	8	31	44 "	212 average.

Experiments made to determine if the Bouchet French powder creates more or less foul residue than English powder.

We took two firelocks and fired fifty charges of powder, one firelock with French and the other with English powder, we then repeated the trials, charging the first with English and the second with French powder: in every instance felt waddings were used. The two powders gave nearly the same results, the firelocks in both instances were soiled so little, that they did not increase in weight more than one gramme.† It may without doubt be objected that the waddings cleared the foul residue, the foulness arising from one charge having been carried off by the following; but these experiments show, at least, that with these powders it is possible to fire a great number of rounds without the necessity of cleaning the piece.

* Five grammes are equal to 2.825 drams avoirdupois,—*vide* Barlow's Dictionary —TRANS.

† One gramme is equal to 15.444 grains English.—TRANS.

The quantity of damp absorbed by the French and by the English powders, in an atmosphere nearly saturated with moisture.

The quantity of powder operated upon was 100 grammes.* The two powders were spread upon two pieces of glass of equal surfaces, and placed by the side of each other, in a cavern of no great depth, but very damp, from the 15th of February to the 10th of March. During this time the centigrade thermometer was between $5\frac{1}{2}$ and 6 degrees; and the hygrometer between 96 and 99 degrees.

On the 10th of March, that is to say, after having been exposed to the damp air for 24 days, the powders weighed as follows: The French powder 101 grammes 30; and the English 101 grammes 80; this had increased 1-56th of its weight and the other 1-76th.

Submitted afterwards in the same state, and immediately after weighing, to the hand *eprouvette*; they yielded, upon an average of five experiments, the French 19,95 and the English 18,38.

Density of the two powders.

Between the density of the two powders there was an obvious difference. A litre† of French powder weighed 905 grammes; one of English only 857 grammes.

Density, carried to a certain extent, that is to say, to such a degree as not to retard inflammability, is one of the elements of quality; the result of it is that the tension of the gases which develop themselves is more considerable, and consequently the missile is thrown farther, and the powder ought to be less subject to be damaged. The qua-

* A 100 grammes is equal to 3 ounces 8·5 drams avoirdupois.—TRANS.

† A French litre is equal to 61·028 English cubic inches.—TRANS

lity of common powders would be improved by being submitted to the action of the hydraulic press.

Analysis of the powders.

The great strength of these powders has induced some persons to believe that they were formed of different ingredients from the common powders; the fact is, that they are formed exactly of the same ingredients, viz. salt-petre, charcoal, and sulphur; but they are indebted for their superior quality to a superior method of manufacture.

A 100 component parts of these powders are: French powder, 78,00 salt-petre, 12,83 charcoal, 9,12 sulphur. English powder, 79,70 salt-petre, 12,48 charcoal, 7,82 sulphur. The result of all these observations is, that the sporting powder made at the establishment of Bouchet, is much stronger than the old powder *des princes*; that it is, at least as good as the Dartford powder, which was given us as the best in England, and that the superior qualities of these powders depend altogether upon the charcoal used, and the processes employed in preparing them.

There is no obstacle to the making of war powder, by analogous process; it would certainly possess more strength than the present war powder; but whether it could be manufactured with the same economy is not certain; this could however be easily decided by a few experiments.

We have the honor to be, my Lord,

“ Your very humble servants,

(Signed)

LE COMTE CHAPTAL, President of the Commission.

THENARD,

DE PRONY, } Members of the Academy of Sciences.

HERICART DE THURY, and,

BARON LE NOURY.

Observations by the French Correspondent, who submits the above Report.—This report confirms what we advanced in a preceding number, that the French Artillery are successfully employed in important improvements in the different branches their service embraces. We may, notwithstanding, be permitted to make one observation upon the experiments made by the Commission. They prove, satisfactorily, that the Bouchet powder is as strong as the English powder; but they have not acquainted us in a satisfactory manner with the degree of strength possessed by the powders, or how much superior the new French powder is to that which used formerly to be manufactured. The initial velocities are not at all in proportion to the quickness of recoil in the *fusil éprouvette*, and such quantity of powder as augments the force of the recoil, diminishes that of the projectile, so that we cannot ascertain the one from the other, in all cases. Such is the result of the comparative experiments made by Dr. Hutton on the force of the recoil and initial velocity. This sort of anomaly could certainly not be evident, with the small charges of five grammes which were employed.

The experiments might however have been more numerous; different charges might have been tried, and among others, that of half the weight of the ball. We do not wish to invalidate the conclusions of the learned authors of the report; we only regret, after all the experiments that have been made, that we are still in want of proper accounts of the initial velocities which the French powders can communicate to balls. If the counter-pendulum be, as we believe it is, no more than a pendulum with a metallic weight intended to receive the shock of the projectile, it does not appear to us, that its recoils ought to be employed to calculate initial velocities. It can only indicate initial velocities less than those which really exist, be-

cause it has to eject the ball. It would be, besides, difficult to take into calculation all the circumstances of the shock which conspire to vary the velocity. Nevertheless the fusil *épreuve* constructed perhaps of a larger calibre, appears to us much preferable to all those hitherto employed, for the reception of ordinary powder. But among other matters which interest the artillery service, is the ballistic pendulum or rotatory machine, which one of the learned authors of the Report made use of in 1803, and which excels the fusil *épreuve*; and as a number of experiments have been made with these machines, the details and results of which have been inserted in several works, the question of the strength of powder might have been decided in a peremptory manner, if the commission had added to their labours the calculation of initial velocities.

TRANSLATION OF AN ARTICLE HEADED
CONGREVE ROCKETS,
IN THE EIGHTH VOLUME OF THE BULLETIN UNIVERSEL
FOR THE YEAR 1834, BY MONTGERY.

“

In order to make a sort of rocket, after the manner of Congreve, one has only to put a grenade, a shell or carcass full of incendiary materials to the head of a large sized rocket. It does not much matter whether the case be made of pasteboard, of paper, of wood, or of metal; all of these have been often used. To throw incendiary or detonating projectiles by means of rockets, in lieu of employing ordnance, is the distinguishing character of this invention. In general, this invention passes for a novelty, and some philanthropists wish it were proscribed, because they think it too murderous; while the greater part of our military-men consider it quite insignificant. The two first

opinions are erroneous, and the third ought to be modified. Let us first examine the question of its novelty, or rather its antiquity.

The soldiers of the lower empire carried inside of their bucklers, light tubes, or hand-siphons (*χειροσιφωνα*), full of artificial fire (*εσκευαμενου πυρ*), which were by that means thrown into the air with great force. The Emperor Leon, a philosopher, himself caused these siphons to be prepared, (1) an operation which the Greeks always anxiously tried to keep secret. (2) Without attempting in this place to discover their secret, we may conclude, that fire-works which struck into the air with violence, would, by virtue of their re-action, cause their cases also to fly, when by any chance these escaped along with them from the hands of the soldiers. A sort of rocket appears therefore to have had existence towards the end of the ninth century. (3)

(1) *Leonis Tactics, in J. Meursii Operibus.*—Military Institutions of the Emperor Leon, translated by Maizeroy.

(2) *Constantinus Porphyrogeneta, de administratione Imperii Orientalis.*—*Κεῖρε τον συνοψις ἱστορίαν*, Parisiis.

(3) Leon, surnamed the philosopher, ascended the throne in 886. It is not certain that he invented the hand siphons, but before his reign no trace of them can be found in the Byzantine history. The great siphons described at first, by Thucydides, and Apollodorus, and the use of which was renewed by Callimachus in 672, were a description of pumps, that ejected naphtha, pitch, and other liquid inflammable matters. From these the name of Medean fire is derived (*Μεδικων Πυρ*) and liquid fire (*ύλρον Πυρ*). The fire-works which burn in water, called Roman fire and Greek or "gregcois" fire, were first in use among the Assyrians, the Chinese, the Chaldeans, the Persians, the Jews, the Medes, &c. They afterwards passed into the hands of the Phenicians, the Greeks, the Romans, the Alexandrines, the Byzantines, the Vandals, the Arabians, the Franks, &c. Not only has this fire been employed at very early epochs, but it has

In the celebrated manuscripts of Marcus Græcus, (4) may be found at once the method of making gun-powder, Greek-fire, and war and other rockets. The same information appeared in a work of the 13th century, attributed to Albert the Great.(5) Roger Bacon appears to have been acquainted with something similar (6); but he, like Marcus and Albert, has not said a word of cannon or any other similar engine, so that the rockets, called Congreve rockets, which at this time of day are regarded as a recent invention in artillery, are on the contrary, one of the most ancient. Of this, we proceed to submit other proofs(7):

From time immemorial the Chinese have had fire-arms, and above all, fire-works, but they did not make any remarkable use of them in war, until the commencement of the 13th century. At this epoch, that is to say, about the year 1232, they defended themselves against the Tartars by means of shells, fire-works and rockets.

These we have just seen, were then known in Europe; but, notwithstanding very numerous researches, I have not been able to find proofs of their being employed till the never been entirely out of use. The method of composing and employing it is to be found in a great number of works both ancient and modern. Certain differences in the ingredients, in the preparation, and above all, in the name, are the causes of all the errors arising out of this subject in Theophanus, Cedrenus, Albert de Air, Melancthon, La Porte Pancirolle, Schott, Ducange, Moréri, Montesquieu, Daniel, Grose, Watson, Gibbon, Hoyer and a number of distinguished writers. Dr. Mackintosh, a Member of the Royal Society of London, has recently published a very ingenious work upon the Greek fire, which contains however some inconceivable blunders.

(4) *Liber ignium ad comburendum hostes tam in mari quam in terrâ*; printed at Paris in 1804.

(5) *De mirabilibus mundi*.

(6) *De secretis operibus artis et naturæ*.—Opus majus, London.

(7) *A. Danduli Chronicon ex Muratorii Scriptoribus rerum Italianum*.

years 1379 and 1380. The Paduans made use of them to burn the town of Mestre (8), and the Venetians to burn the tower *delle Bebe*, which belonged to the advanced fortifications of Chioglia (9). These facts passed nearly under the view of the historians who have related them.

In 1449, Dunois threw rockets into Pont-Andemer, and while the besieged were employed in extinguishing the fire, the French scaled the ramparts.(10)

In a manuscript which was considered very old in 1561, the war and common rockets are described with particular care. And it is recommended to make the cases of a thin iron-plate, and to varnish them to prevent their getting rusty.(11) •

Louis Collado, chief Engineer to Charles V., informs us, that at the epoch when he composed his *Artillery Manual* (1536), they made use of rockets (12) to light up the skirts of besieged places, and to put Cavalry to rout. He wishes they had added "*petards*," in order to have made them more dangerous, and that they had thrown them with the assistance of a long-tube, in order to increase their range. (13)

(8) *D. Chinazzo, della guerra di Chioggia, in Muratorio.*—*Rochetta* is the name which Dandolo and Chinazzo give to rockets.

(9) *Histoire générale de la Chine*, by Mailla.—*Hist de Gentchiscan*, etc. by Gaubil.

(10) See under this date the old *Histoire anonyme de Charles VII* or the *Histoire de la Milice Française*, by Daniel.

(11) A small treatise containing an account of various fire works, &c. The words *roquet* and *roquette* are used to designate the case or envelope of the rocket. The composition or body is called *jeu volant* (flying fire) as in the manuscript of Marcus Græcus.

(12) *Cohete*. This is the expression the Spaniards still make use of to designate rockets. They pronounce it nearly *corete*, an evident corruption of the ancient word *rochetta*.

(13) *Platica manual di Artilleria*, &c. Milan.

Hanzelet also recommended employing rockets against Cavalry, armed with a "*petard*" or grenade.(14)

Furtemback described a sort of backler surmounted by a tube, to be used to throw hand grenades and rockets (Rajetten now Racketten). This author informs us, that the Barbary states, and other Musulmauns made great use of them in their sea-fights. (15) He adds, 1st, that the heads of the rockets ought to be armed with a barbed point of iron; 2nd, that sometimes the case is done over with an inflammable matter, to hinder the enemy from seizing and throwing them back; 3rd, that there should be put into them balls of iron or lead, which form, when it bursts, a very destructive grape. (16)

Towards the end of the 17th and during all the 18th century, little use was made of rockets in Europe, except for *feux-de-joie* and marine signals. But it appears that in Asia(17) they continued to use them in war.

(14) *La Pyrotechnie, &c.* Pont-à-Mousson.

(15) I find elsewhere the confirmation of this fact (*Vie de Tourville*, by Richer) The Chevalier d' Horguincourt, having boarded an Algerine vessel, was received by so great a number of grenades and *lances à feu*, that he was obliged to abandon the vessel. This last combustible, like the hand siphons of the Greeks and our Roman candles, formed a sort of rocket.

(16) *Architectura Navalis*.—This work is written in German although the title is in Latin.

(17) In the different states of this part of the world the *feux-de-joie* had been a long time in use as well as in China. Benjamin of Tudella, a jew, who visited Persia in 1173, saw a great quantity of these combustibles called suns, which are no other then the rotatory rockets. (*Traite des voyages, &c. par Bergéron.*) When the Portuguese landed for the first time at Melinde, in 1498, the Indians never ceased during a whole night, discharging rockets and cannon in token of their joy. (*Hist. des Indes, par F. L. de Castaneda.*)

The soldiers of Tippoo Saib threw a great number at the English during the siege of Seringapatam. (18) Julien de Belair, who had previously seen their good effects, tried but ineffectually to get them adopted in France, about the year 1791. (19) Generals Lariboissiere, Mariscot, Eblé, and several other persons of less note, had no better success; Sir William Congreve was more fortunate in 1805, with his government.

The first rockets, that he procured for the use of the English navy and army were merely filled with incendiary materials, (20) and it was this, more than any thing else, that contributed to bring them into discredit.

When rockets, or other projectiles charged with mere inflammable substances, are thrown into a town, they often fall upon stones, or on the earth, and their effect is totally lost, or if they fall upon a combustible object, their effect may be destroyed either by quickly throwing them off again; or by throwing water upon them. It is the same on board ship. Incendiary projectiles are in fact inoffensive against troops, except to frighten their horses, or in cases where they fall precisely in their road.

The detonating projectiles filled with powder are evidently more destructive. Not only do they communicate fire and combustion, but their explosion destroys and overturns every thing within their reach.

Congreve often substitutes incendiary substances for powder, consequently his rockets have the effect of bombs,

(18) James's Military Dictionary, under the word rocket.

(19) *Elémens de fortification*, &c.

(20) One of our cleverest chemists, M. de Arcet, has given an analysis of these substances and a description of the rockets, with great clearness and perspicuity. *Bulletin de la Société d'encouragement*: June 1814.

or shells; and not unfrequently they even carry one of these projectiles. There are some which contain musket-balls mixed with powder, like the iron spherical case or shell of Colonel Shrapnel.(1) There are others, which having arrived at a great height, separate into a ball of fire; these, furnished with a parachute, descend slowly and burst in the air with a brilliant light. Lastly the inventor has tried with success, to throw all these rockets by means of a long tube; he desired, above all, to disembarass them of their stick or directing tail, and to make them large enough to contain 1,000 pounds of powder.(2) These three last improvements, without being new, deserve serious attention.

Collado and Furttemback had already learnt from experience the advantage of using a tube to throw their rockets. In 1650 a clever artillerist recommended throwing aside the stick, and to place four spiral triangles about the case.(3) Our celebrated Ruggieri renewed this practice some time since. As to extraordinary dimensions,

(1) The Sea-Gunner's Vade-Mecum, by R. Summons, London 1812. Rees's new Cyclopædia at the word rocket. We have just seen that Furttemback recommended putting balls in the rockets. This recommendation had already been made by many other artillerists, as applicable to shells, grenades and fire-pots. They instructed us, at all events, to substitute for balls irregular pieces of iron, very small grenades, and the ends of musquets charged with a little powder and loaded with ball. Colonel Shrapnel then has done nothing more than renew an old invention; but he has added to it some improvements; the rocket is very short, and it bursts ordinarily while the shell is still in the air; the balls then form a bunch of grape, which can strike the enemy at great distances.—*James's Dict.* at the word spherical case-shot.

(2) Rees's new Cyclopædia—Public Papers.

(3) Casimir Sieminowicz *Ars magna Artilleriæ*.

rockets have already been made of a larger size in Asia than they probably will ever be made in Europe. The Birmans, by Symes's account, made enormous ones, (4) and Captain Cox saw them commence one, which would contain 10,500 pounds of powder. (5)

Some persons, both in England and France have disputed the invention of the rocket being Congreve's, and pretend to be the true inventors. The only reasonable pretension, with respect to this weapon, is that of having added some improvement to them, and renewed the use of them; now it is evident that this is what Congreve has done. But let us leave the subject of the antiquity of the invention, and see if the employment of these rockets be so extremely murderous as some philanthropists suppose, or altogether of no effect, as many of our officers affirm.

Experience has hitherto proved, that Congreve rockets are not formidable against troops in battle. Besides deviating considerably from their designed course they have so little velocity, that it is easy to avoid them. Their effects were turned into ridicule by our conscripts in the war before the last in Spain; (6) and they only inspired contempt when employed against the American militia in 1814 and 1815, in the neighbourhood of New Orleans. The English discharged a great number of them in that campaign; but although they emptied two chests, they only killed and wounded ten men. (7)

(1) Relation de l'Ambassade Anglaise.

(5) Journal of a Residence in the Birman Empire; London.

(6) The account of several eye-witnesses.

(7) Historical Memoir of the War in West Florida and Louisiana, by Major A. Lacarriere Latour: Philadelphia.

At Leipsic the English and their allies pretend that they did great execution.(8) Every thing was favourable for them. There was a great number of men, horses, chests, and baggage upon the field of battle; but under equal circumstances, grape shot and the shells discharged from ordnance, would have been much more destructive, because they strike more exactly and from a greater distance. Rockets only frighten horses more.

It is in sieges that they have produced the most effect; their partisans cite with satisfaction Copenhagen, Flushing, and Dantzic. (9) While their detractors on the contrary, say that they occasioned less damage at these places than bullets, shells and carcasses would have done: they even state, that at Flushing they returned sometimes upon those who had thrown them. They also remark how useless they were against Boulogne, Barcelona, Plattsburgh, Norfolk, Lewistown, Stonington, and against several other strongholds.(10)

As ships offer much less surface than strong places, they are rarely struck by rockets, even when there is a great number of them together in a road, or in a confined port. The English discharged almost uselessly several millions of rockets against the flotilla at Boulogne in 1806, and against the squadron at the Isle of Aix in 1809. It is not from a distance and under high elevations, but when

(8) Rees's new Cyclopædia, under the word rocket. *Bulletin des découvertes nouvelles*, by M. Hermbstædt, cited in the *Bulletin de la Société d'encouragement*, June 1814.

(9) Rees's new Cyclopædia. *Aide-memoire des officiers d'artillerie. Voyage d'un Français en Angleterre*, by M. Simond.

(10) *Aide-memoire—Voyage d'un Français.—Naval temple*, published by B. Badger, Boston,—*History of the War*, &c. by T. O'Connor, New York.

near at hand and under nearly horizontal elevations that they must be thrown against a ship; and even then ability and expertness are necessary to direct them properly. During the attack on New Orleans in 1814, the English, tho' under cover of a bank of the Mississippi, endeavoured in vain to drive off a schooner, whose guns incommoded their camp.(11)

There is one advantage in the rockets which is very alluring: they may be carried without the help of a wheel carriage, in countries covered with forests, in mountains or in marshes. Every horse or foot soldier is able to carry one, two, three and even four, for the weight of those in use, is sometimes no more than 5 kilogrammes, and from that up to 22, the stick not included. The frame used to discharge them, is of equally easy transport, on a horse, or in the arms of men, and may be placed any where: no recoil takes place, and there is no need of a stand of any particular nature like a gun carriage, so that without a trench, without a park of artillery, without any of the preparations for a siege; any troops can, during the night, approach close to the walls of a place, and throw into it a great number of rockets, and if they do not take effect against so large an object it must be either because they are thrown from too great a distance, or very awkwardly. At sea small vessels (12) might quickly be put into a state to fire rockets while it requires great preparations to make use of mortars or howitzers of a large calibre. At night these small vessels are invisible at the distance of 5 or 600 metres, and they can easily be placed at this distance about such maritime places as Saint Maloes, Gibraltar, and Cadiz. Our army both by sea and land has recently

(11) Historical Account of the War in West Florida and Louisiana.

(12) Remarks by the Minister of War and the Director of Fortifications at Washington.

felt before this last city, the want of being provided with rockets and experienced delays which might have been fraught with the most destructive effects if the equinoctial gales had been very violent. To defend one's self against vessels throwing rockets into a place, or to discover their position, nothing can be better than to employ rockets with parachutes. As to the detonating rockets, they are employed with great success in killing whales.

Many other advantages and inconveniences than those now mentioned have been attributed to the Congreve rockets. Their partizans and declared detractors have in turn boasted, and fought chimeras. People should however reflect much more than they are generally in the habit of doing, before pronouncing a final judgement upon any invention whether new or renewed.

Mechanism and chemistry have not been cultivated to the extent still possible; these arts extend over all nature, and have no limits but those which confine her. Congreve has been occupied since the peace in perfecting his rockets. It is probable that so ingenious a man, supported by the richest of all governments, will completely succeed in his enterprise. This object is also however pursued in other countries as well as in England.

The public journals have announced that in 1820, Colonel Augustin discharged rockets brought to much perfection, before the court of Vienna. They have reported also several experiments made in Denmark by Capt. Schurmacher. The most singular of which was that signal rockets have been seen at the distance of 30 leagues.

In America, to dispense with the sticks, they have endeavoured to fire the rockets in such a manner as to impress on them a rotatory motion round their line of range. This experiment has succeeded.(13)

(13) There may be found numerous remarks upon these works in the Aide-memoire.

In France the government has several times caused the rockets, so well described by M. D'Arcet, to be made and tried. General Rutty, when we were in possession of Seville, had some made in that city, which carried to the distance of 2000 toises, although they were only three inches and a half in diameter. This range surpasses by 300 toises those of the English rockets of the same calibre.

The aéronaut Garnerin, by means of a particular construction, endeavoured to throw rockets to the prodigious distance of 4,500 toises. He invented some of a different description which he calls *Courre-à-terre*, because they glanced horizontally on the ground by means of two rulers of wood.(14) •

Captain Parlbry, in the East India Company's service, tried in Bengal, in 1823, rockets made under his special direction. The most remarkable matter on this occasion was their being thrown from a tube 16 feet long. This officer is strongly supported by the local authorities, who as well as himself appear unacquainted with all that has been done of the same kind.(15)

After having examined successively what has been done or proposed, let us lastly apply ourselves to consider some improvements. The most essential is to procure accuracy of direction and range in firing rockets; for all arms become useless when their projectile does not strike the mark aimed at. The stick or directing tail is of a larger size and of less weight than the body of the rocket, and it is easier turned aside by the wind. If the wind blows from the left, the stick will incline towards the right, and the rocket swerve to the left, and *vice versa*. Should the wind blow

(14) *Annales des faits et des sciences militaires*, March 1819.

(15) *Asiatic Journal*, June 1824.—*Bulletin des Sciences Militaires*, No. 8.

in the same direction as the range, and its strength exceed that of the projectile, it may entirely turn the stick and cause the rocket to return on those who threw it. To obtain correct ranges, the air should be calm, or the wind precisely contrary to the range.

The sticks, besides causing deviations, are very inconvenient on service. Their great size rendering it necessary to separate them from the rocket for the purpose of carriage. They are fixed on at the time of firing.

We already know two substitutes for the sticks: four wings placed spirally, and a particular method of letting the elastic fluid escape: the wings would be subject to break, and the last method, not having been subjected to many experiments, has perhaps many inconveniences which there has not been an opportunity of discovering. It would seem preferable to form a number of spiral lines, of but small depth, upon the outside of the rocket case. These equal spiral lines give great accuracy of range to the balls of carabines, and to the new lengthened English howitzer. The first fact has been proved by the experience of several centuries, and the second by late experiments. (16)

Instead of hollowing the spiral lines in the metal used as the case, they might be figured outside this case with a paste made of saw-dust, like what is commonly used for bas-reliefs. This paste, although of a light specific weight, acquires an extraordinary tenacity.

As to the method of throwing the rockets with long tubes, it seems to be defective. These tubes are much

* *Note by Translator.*—Monsieur Montgery has here fallen into an error, the accuracy in range of the new English howitzer is obtained by a sufficient length, weight of metal, charge, and reduced windage &c. &c. being given.

(16) I have given an account of these elsewhere—*Annales Maritimes*, January and February.

lighter but more embarrassing than a cannon, carronade, or howitzer.

When we wish to obtain very long ranges, the rockets must be made with a particularly strong case, and after having formed the spiral lines with the same metal, these projectiles could be fired from a cannon, or any piece of ordnance of their calibre. A rocket, the diameter of which might be ten inches, thrown by Villantroy's howitzer, would range four or five thousand toises. There are very few places that cannot be approached nearer; and consequently, this range would rarely be necessary. But it would be very advantageous to obtain exact ranges of 1,500 to 2,000 toises with rockets and cannon of a light calibre.

The rockets, containing from five hundred to a thousand pounds of powder, such as it is the intention of Congreve to manufacture, are not intended to be thrown from great distances. This officer thinks, that by firing such rockets from short distances, they would have sufficient power to break down, with a single blow, the *revêtement* of a rampart, and make a considerable breach. I join with him in opinion, and the following is what I would propose to try. The principles would be the same, whether the rockets weighed 500, 1000 pounds or more.

But in order to make them lighter, it would be better to increase the strength of the powder, by adding to it fulminating mercury, the manipulation and employment of which, would be attended with no danger, when certain precautions are taken. We should then have projectiles with an equal effect to those weighing 500, 1,000, or 2,000 pounds, of only 200, 400, or 800 pounds weight.

One of these large rockets could be placed horizontally upon a carriage similar to that used in agriculture: the head of the rocket should be turned towards the hinder part of the carriage, so that, on arriving at a battery, the

head would be directed towards the objects to be destroyed. Thirty such weapons might be conducted during the night under the walls of a strong place: at a signal given all the rockets might be fired; they would make thirty breaches, and a sudden assault could be given. A small force attacking in this manner a place unawares, might succeed probably in surprising a garrison stronger than themselves.

Rockets weighing 1000lbs. almost filled with grenades, would produce also an irresistible effect amongst a column of troops, particularly in a street or hollow way, and carriages might be constructed to serve the double purpose of carrying and firing such ammunition.

The same kind of projectiles are applicable to sea service, and would always hit their mark if not let off until the enemy was within 60 paces distance. I have already described the mode of firing them on water, (17) and if the rocket contained only two or three hundred lbs. of powder without a single grenade, it would be sufficiently powerful to carry away the bottom of a ship of the first rate. These new projectiles, altho' apparently very expensive, would be really very cheap, for every blow would be decisive.

The adoption of the most powerful means of destruction will never tend to render wars more sanguinary, the contrary is always the case. In proportion as one is well armed, he is the less seldom attacked, and when attacked his battle is the sooner concluded. The advantage will always remain with those nations which are most industrious, and it is they who best know how to appreciate all the miseries of war and all the advantages of peace.

MONTGERY.

(17) *Annales Maritimes*, September 1823.—In this work may be found the history of submarine rockets.

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VOL. IV. PART II.

ARTICLE I.

ATTACK OF DOONDIA KHAN'S FORTS OF
KAMONA AND GUNNOURIE.—(*Concluded.*)

November 22d, 1807.—Marched to Gunnourie 18½ miles, measured from the park of our last camp; and 16½ miles from Kamona. Passed the Fort of Anowna, 10 miles from our last park, and 3½ miles from Kamona. This in an old Gharry, which Doondiah Khan had enlarged by adding a new Rownee, &c. to it; and it would, in five or six months, have been rendered a place of strength. Passed Shikarpoor, a large town, with houses of masonry, about five miles from Anowna.

This day Major General Dickens wrote to the Adjutant General as follows:—

“ Sir,

“ I have the honour to acquaint you, for the information of His Excellency the Commander in Chief, that I have this day occupied an encamping ground before Gunnourie, having left Kamona at seven this morning.

“ On our march, which lay close under the walls of Anowna, at the distance of 10 coss from Kamona, I inspected that little Fort, which I found to have been made so strong by new works, since we were besieging Kamona, that I considered it necessary to leave a company of Native Infantry as a garrison for its protection: and I should strongly recommend the works being entirely demolished as soon as possible. Our march has been rather long, so that I fear I shall not be able to give you much information to-day respecting Gunnourie. To-morrow it will be reconnoitred by Colonel Horstford and myself.”

November 23d.—Reconnoitred the Fort this morning—fixed upon the little village of Millick in front of the camp, and about

967 yards from the ditch of the Fort, as the spot from which to break ground. This village bears N. E. by E.

Major General Dickens this day addressed the Adjutant General as follows :—

“ Sir,

“ I had yesterday to report to you, for the information of His Excellency the Commander in Chief, our arrival before Gunnourie.

“ We have now taken up such a position for the siege as will, I trust, effectually prevent the enemy from receiving supplies of any kind.— But on one side of the Fort there is a jungle of such extent and so thick, that I doubt whether it would be possible to prevent their escaping out of the Fort, should they make the attempt.”

Night between the 23^d and 24th November.—Broke ground this night 210 yards in front of the village of Millick, which is $1\frac{1}{2}$ miles from the Artillery Park. Pioneers carried on a trench of 130 yards in length towards the Fort.

November 24th.—The Head Quarters of H. M. 17th Regiment under Colonel Stovin arrived this morning. The whole of that corps was now in camp.

“ This day Major General Dickens addressed the Adjutant General as follows :—

“ Sir,

“ I have the honour to acquaint you, for the information of His Excellency the Commander in Chief, that five companies of H. M. 17th Regiment marched into camp this morning, and that the whole of that corps is now with this army, under the command of Lieut. Colonel Stovin.

“ We broke ground last night at the distance of 700 yards from the wall of the Fort, and no time shall be lost in bringing the siege to as early a termination as practicable.—Field Army Orders. Lieut. Colonel Stovin, H. M. 17th Foot, to be a Brigadier. The army to be brigaded as follows till further orders.

“ 1st INFANTRY BRIGADE.

“ Lieut. Colonel Stovin.

“ H. M.'s 17th Foot.

“ 1st Batt. 27th N. I.

“ 2d Do. do. do.

“ 2d INFANTRY BRIGADE.

“ Lieut. Colonel Hutchinson.

“ 1st Batt. 13th N. I.

“ 1st Do. 23d do.

RESERVE.

“ Lieut. Colonel Horsford.

“ The Cavalry.

“ Grenadier Battalion, &c.

“ Captain Hawkins, H. M. 17th Foot, to be Brigade Major to Lieut Colonel Stovin, Commanding the 1st Brigade.”

Night between the 24th and 25th November.—Continued the approach during this night by 150 men of H. M. 17th

Regiment. Widened and deepened yesterday's work during this day by the Bildars.

November 25th.—This day Major General Dickens addressed the following letter to the Adjutant General.

“ SIR,

“ I have the honour to acquaint you, for the information of his Excellency the Commander in Chief, that our approaches were carried on again during last night, and shall be continued with unremitting industry.

“ I consider it my duty to state, that though it may be proper, in every point of view, to make regular advances, yet I am not of opinion that the enemy will abate the consequences of an assault.

“ He is now reduced to his last fort, and consequently I am enabled to invest him so closely as to preclude the hopes of any relief.

“ With reference to the general destination of the troops, according to the relief specified in General Orders, I have directed the 2d Battalion 24th Native Infantry to proceed from Agra to camp, in order to my detaching the 2d Battalion 27th Native Infantry to the garrison of Agra, their intended station, so as to set at liberty the 2d Battalion 4th Native Infantry to go down to Cawnpore.

“ I trust these dispositions will meet his Excellency's approbation.”

Night between the 25th and 26th November.—The Bildars employed deepening and widening the trenches during the day. First small parallel dug at the end of last night's trench by the Pioneers. The length of the parallel to the right is 50 yards, and to the left 50 yards.

Placed two 6-pounders at the back of the village of Millick.

November 26th.—This day Major General Dickens addressed the following letter to the Adjutant General.

“ SIR,

“ I have the honour to report to you, for the information of his Excellency the Commander in Chief, that our trenches were carried on last night; and to-night we shall commence our first parallel, at the distance of about 600 yards from the slope of the glacis.

“ Several persons who had served in Kamona have been apprehended, some of them wounded; but as no useful purpose would be served by punishing these men by martial law, I have preferred sending them to the Magistrate of Allyghur, to be dealt with as he may think proper.”

November 27th.—The Bildars employed in widening and deepening the trenches during the day.

November 28th.—Trenches carried on as usual. Bildars deepening and widening.

Major General Dickens this day addressed the following letter to the Adjutant General.

“ Sir,

“ I have the honour to acquaint you, for the information of his Excellency the Commander in Chief, that our trenches are now advanced so far as to enable us to erect our battery, which will be commenced as soon as the necessary quantity of materials can be got ready. From every information I can collect, the force of the fort does not exceed 500 men, so that I think it reasonably may be supposed that Doondia will not await the event of being stormed.”

November 29th.—Trenches carried on as before.

November 30th.—From a measurement taken by a Native artilleryman last night, the distance from the head of the trench this night to the ditch is 236 yards.

Dug backwards this night, commencing at the beginning of the approach, and going back to the village of Millick.

The following is an extract of a letter addressed by Major General Dickens to the Adjutant General.

“ I have much pleasure in adding, that not a single casualty has as yet occurred in the trenches, and that we shall be ready to erect our battery to-morrow night, so as to have it finished by the following morning.”

December 1st.—Bildars employed in the day deepening and widening the trench, up to the head of it.

Dug backwards again this night, to bring the trench to the village.

December 2d.—Work as yesterday, filling sandbags at the village, and conveying them to the head of the trench, ready for the batteries.

Night between the 2d and 3d December.—Sent the gabions, fascines, &c. down to the village this night. Ready for erecting the battery to-morrow night.

December 3d.—Bildars employed in filling sandbags, and carrying them to the head of the trench, assisted by 100 Lascars.

Materials for the battery carried down in the evening.

Night between the 3d and 4th December.—Commenced on the 18-pounder battery, in a line with the head of the trench, and a few yards to the right of it. Began lining out at 6 o'clock, the gabions and space between the platform row

of gabions, and the exterior sandbags filled in, and rammed with earth, and completed about half after 12 o'clock, when the embrasures were cut out, and the fascines to line them began to be picketed. The battery, except covering in the embrasures with fascines, was finished about 5 o'clock in the morning.

Remains to be executed, a trench to the right for the battery, guard—that on the left to be used as a communication with the great trench. The magazine for the battery also remains to be done.

MEMORANDUM.

Batteries erected before Gummourie.

The breaching battery erected for six 13-pounders, iron guns, was 153 feet in length, and $7\frac{1}{2}$ feet high. The length of the merlons was 15 feet inside, and the openings of the embrasures inside 2, and outside 6 feet.

The inner face of the battery parapet was composed of gabions, each of 3 feet 8 inches high, and 3 feet in diameter, filled with earth well rammed. The outside was composed of layers of sandbags, three feet in thickness; the space between the gabions and sandbags being earth, well rammed, 6 feet in breadth. Total breadth of the battery 12 feet. The following length was used for fascines, viz. 9, 6, 5, and 1 feet. The first row of fascines was composed of those of 6 and 9 feet long; the second and third row of 5 and 9; the fourth, fifth, and sixth rows of 4 and 9; the seventh and eighth of 6 and 6; and the ninth of 6 and 5.

The embrasures of the breaching battery were covered with bamboos, made like ladders, laid over the embrasures, and fastened down with hooked or crooked pins, and then covered with fascines, fastened well down in the same manner. Aim frontlets of wood, 4 inches thick, were used, fixed on the breach of the guns, which saved lives, and prevented several from being wounded. They were finally found covered with matchlock shot, being only 320 yards from the fort.

The flank batteries were each sunk 3 feet below the level of the soil, for the platform or sole of the battery. The merlons were made of gabions and fascines. These batteries were $7\frac{1}{2}$ feet high; thickness of the merlons 12 feet, viz. 3 feet

of gabions, and nine feet of fascines. The sides of the embrasures were covered with buffaloe hides, to prevent them catching fire; the hides were kept constantly wet. These batteries answered either for howitzers or guns. Blinds were used, which were put up to the embrasures immediately after each round was fired.

The battery magazines were sunk 6 feet, and made about 10 feet square; the roof supported by strong beams and planks, and covered with tarpaulins, and earth laid over the tarpaulins. The entrance was from the battery, just sufficiently broad for one man to pass another. The entrance to the magazine was near 8 feet in length, and then turned to the left into the magazine. There was only one day's consumption of ammunition kept in the magazines, which was replenished every night at dark. The ammunition was despatched from camp, so as to be near the batteries when it was getting dark, and was brought close up to the magazine with little noise, so as to prevent the enemy hearing the rattling of the draft chains of the carriages.

*December 1th.—*Major General Dickens this day addressed the Adjutant General as follows.

“ SIR,

“ I have the honour to acquaint you, that our batteries were begun last night, and will I trust be completed to night. Lieut. Steel of the Engineers having arrived at Agra, I have considered it my duty to direct him to proceed to camp, which I hope his Excellency will approve.”

This day Major General Dickens also addressed the following letter to the Adjutant General.

“ SIR,

“ I have just received the enclosed information from Captain Nuthall, Commanding 3rd Native Cavalry, who was employed in the command of a detachment against this fort during our operations before Kamona.

“ The intelligence appears to me to be of considerable importance; and for that reason I have forwarded another copy to the Resident at Delhi, in the hope that measures may be adopted to put an end to the communication between Doondiah Khan and the Goojur Chief. The former is so closely invested in Gunnourie, that I am confident he cannot escape with any number of attendants.”

The following is the information alluded to in the foregoing letter.

Major General DICKENS, Commanding Field Force.

"SIR,

"I deem it proper to acquaint you, that it has been represented to me that Nyne Sing, a Goojur Chief, who holds the fort of Preechut Ghur, about 30 coss from hence, in the district of Meerut, and distant from it about 10 or 12 coss, towards the Ganges, is in the interest of Doondiah Khan, and that a correspondence is daily passing between them. Doondiah, either previous to or immediately after the evacuation of Kamona, caused a considerable part of his property to be forwarded to this man; and I am informed it is his intention to endeavour to effect his escape from Gunnourie to Preechut Ghur, which is represented to me to be a place of some consequence, and has several guns in it. I feel it my duty to give you this early intimation, in order that some enquiries may be made into the conduct of Nyne Sing by the Civil Magistrate of that district, and, if necessary, that steps may be taken to secure the person of Nyne Sing.

"I remain, &c.

J. NUTHALL."

*Cavalry Camp, }
4th Dec. 1804. }*

Night between the 4th and 5th December.—Covered in the embrasures of the breaching battery. Dug a trench to the right and left of the battery—prepared the magazine in the rear, laid the gun carriage platforms, and completed the battery.

December 5th.—Major General Dickens addressed the following letter to the Adjutant General.

"SIR,

"I have the honour to report to you, that our 18-pounder battery was erected last night, at the distance of about 350 yards from the fort, and I am happy to add, without any casualty. To-night the platforms will be laid, and the guns carried up."

Night between the 5th and 6th December.—The six 18-pounders were put into the battery this night.

December 6th.—Opened the six 18-pounders this morning on the nearest large round bastion to the right. Enemy fired on the battery from this bastion with a 6-pounder, and another gun about the same time.

Expenditure of Ammunition.

18-Pounder Battery,	{ Case,	30 shot.
	{ Round,	361
		Total 394

Major General Dickens this day addressed the Adjutant General as follows.

"I have the honour to acquaint you, that a battery of six 18-pounders opened this morning on the fort; and to-night a howitzer battery, and one for two mortars will be ready. I have every reason to hope that I shall soon be able to send you favourable accounts of the reduction of Gunnourie."

Night between the 6th and 7th December.—Began a battery for two 8 inch howitzers and two 5½ inch mortars this night, on the left of the head of the approach, the right bearing on the 18-pounder battery; the left a little advanced. Sunk the platform 3½ feet deep: the parapet of this battery was 60 feet long by 11 feet broad. Placed the parapet of gabions and fascines; dug a communication into the approach, and a trench of communication round the outside of the 18-pounder battery, and repaired the battery.

December 7th.—Firing from the 18-pounder battery. Completing the mortar and howitzer battery, the latter armed at night.

Enemy fired from two guns, seven or eight rounds on the 18-pounder battery after sunset.

Expenditure of Ammunition.

18-Pounder Battery, 470 round shot.

This day Major General Dickens addressed the Adjutant General as follows.

"Sir,

"For the information of his Excellency the Commander in Chief, I have the honour to report to you, that the breaching battery has continued, from its first opening, to fire with good effect on the bastion of the fort. And last night the howitzer battery was constructed, which, as well as the mortars, will be ready to open about noon to-morrow.

"I have great pleasure in adding, that though much firing from the fort upon our batteries and trenches has taken place, yet no casualty has occurred."

December 8th.—Breaching battery firing as usual. Began a battery on the end of the trench to the right of the 18-pounder battery, for three 12-pounders this night, and nearly finished it.

Expenditure of Ammunition.

18-Pounder Battery, 11 Case Shot.

Ditto Ditto, 333 Round do.

Total 315

5½-inch Mortar, 35 Shells.

December 9th.—Opened the howitzer battery this morning. 18-pounder battery firing as usual. Got a 5½-inch howitzer and one 18-pounder into the new battery last night.

Firing as usual from the howitzers and mortars, between 9 and 12 o'clock at night.

Expenditure of Ammunition.

18-Pounder Battery, Case 12 Shot,	| 8-inch Howitzer, 27 Shells.
Round 386	
	| 5½ ditto Mortar, 63 do.

Total 398

Total 90 Shells.

December 10th.—Batteries as usual.

Lieut. Steele of Engineers arrived this morning.

Exchanged an 18-pounder carriage, broken in the axletree band. Put a second 12-pounder into the battery.

Begun the sap this night on the right of the 12-pounder battery.

Expenditure of Ammunition.

18-Pounder Battery, 330 Shot.	| 8-inch Howitzer, 26 Shells.
	| 5½-inch Mortar, 28 do.

Total 330

Total 54 Shells.

Major General Dickens this day addressed the Adjutant General as follows.

" Sir,

" Our batteries have made great progress in demolishing two of the bastions of the fort and the curtain between them. Our mortars and howitzers are also playing with very good effect; and considering that our approaches are nearer here than they were at Kamona, I am extremely happy to have it in my power to report, that we have had no casualties."

December 11th.—Firing as usual from 18-pounders, mortars, and howitzers. This day it was reported, that the enemy had yesterday lost 63 men, killed and wounded by shells.

At 7 o'clock at night, the enemy abandoned the fort, and it was taken possession of by our troops in an hour after.

Expenditure of Ammunition.

18-Pounder Battery, 362 Shot.	8-inch Howitzer, 26 Shells.
12 ditto ditto, 12	5½-ditto Mortar, 48

Total 374 Shot.

Total 74 Shells.

Major General Dickens this day addressed the Adjutant General as follows.

“ Sir,

“ I have the honour to acquaint you, for the information of his Excellency the Commander in Chief, that our approaches were last night carried on fifty yards in front of our batteries, which have made an opening almost entirely through the fort, and the shells have had the greatest effect.

“ I am also happy to report, that 25 men of H. M. 17th, who had been wounded, marched into camp this morning from the field hospital at Coel, under the command of Captain Whitby.

“ 11 o'clock P. M.—I have the greatest pleasure in acquainting you, for the information of his Excellency the Commander in Chief, that we are now in possession of the fort of Gunnourie.

“ Though I received early intelligence of the enemy having quitted the place, and of course the cavalry was ordered to pursue, yet the nature of the jungle is such as to prevent any chance of overtaking the fugitives.

“ On this occasion, I am most happy that possession of the last stronghold belonging to Doondiah Khan has not cost the life of a single soldier, either European or Native. To-morrow I shall have the honour of making a more detailed report.”

December 12th.—Visited the fort, and found five pieces of cannon in it, all brass. 5-pounder the highest calibre.

Measured the undermentioned distances. Length of trench, from the village of Millick to the 18-pounder battery, 737 yards; to which if we add the parallel and the trenches to the right and left of the batteries, and the approach, the quantity of trench dug was about 1000 yards.

From the battery to the ditch before the right bastion breach, is 230 yards.
 Breadth of ditch, 42 feet, 14 do.
 From ditch to the bastion across the Rownee, 11 do.

Total distance of the battery from the breach, 255 yards.

Depth of the ditch, 21 feet, or 7 yards.

Two galleries for counter mines had been made by the enemy in the counterscarp towards the attacks ; their length, respectively, 21 yards and 2 feet, and 23 yards.

Artillerymen killed and wounded at both Sieges and Attacks.

Killed Wounded.

European Artillery,	1	14	} of which four Europeans and one G. Landauze died of their wounds.
Golundauze,	0	2	
Gun Lascars,	8	9	
Bildars,	1	3	
Puckallies,	0	1	

Total Artillery, 10 killed, 29 wounded.

Field Army Orders.—Major General Dickens has the greatest pleasure in announcing to the army the fall of the fort of Gunnourie, more particularly as the possession of it has been unattended with any loss. It only remains to the Major General to express the full sense which he entertains of the truly military conduct of the whole of this force ever since it has taken the field, and which he will not fail to represent in the most favourable manner to his Excellency the Commander in Chief."

Expenditure of Ammunition at Gunnourie.

Date	Rate at which the 18-Pounders fired per Gun.	18-pr case.	18-pr. shot.	12-pr.	Total.	8-inch Howr.	5 $\frac{1}{4}$ -inch Mortar.	Total Shells.
1867								
Dec. 6	6 Case and 60 $\frac{3}{4}$ Round	30	361	0	391	0	0	0
7	0 " " 78 $\frac{3}{4}$ "	0	170	0	170	0	0	0
8	1 $\frac{1}{2}$ Case 55 $\frac{1}{4}$ "	11	333	0	344	0	35	35
9	2 Case 61 $\frac{1}{2}$ "	12	386	0	398	27	63	90
10	2 Case 50 "	0	330	0	330	26	28	54
11	2 Case 60 $\frac{1}{4}$ "	0	362	12	374	26	18	71
	Total	53	2245	12	2310	79	171	253

The following is an account of the mines established to destroy the works of Gunnourie, after it fell.

The first mine was sprung under the glacis. The chamber was 12 feet within the counterscarp, and on a level with the bottom of the ditch. The depth of the ditch, measuring from the edge of the glacis to the bottom of the ditch, was 21 feet. The powder was country made, of native manufacture, taken in the fort, and the quantity used 1 $\frac{1}{2}$ maunds, or 1200 lbs.

The excavation or entonnoir* was a fine slope, somewhat hollowed, from its edge to the middle of the bottom of the ditch, or a slope of about 50 feet. The diameter at the edge of the ditch was 40 feet, and to the field 30 feet. The slope from the edge of the ditch down into it was 25 feet. Some back earth was thrown up towards the field for about 15 feet; but it sloped away to nothing. The highest part of the slope was at the edge of the excavation, and not higher than the crest of the glacis.

The result of this experiment was, that too much powder was used, being considerably more than the rules give.

It must, however, be remarked, that the experiment is not much to be depended on, with respect to accuracy of measurement in placing the chambers of the mine.

Second Mine for the Destruction of the Works at Gounourie, 28th December 1807.

Sprung also under the glacis at a different spot from the former one. The centre of the chamber was 11 feet from the edge of the ditch or counterscarp at top, and 20 feet from the bottom of the counterscarp (there being a slope or talus on the counterscarp of 9 feet;) the chamber was placed on a level with the bottom of the ditch. The depth of the ditch was here 20 feet, measuring from the edge to the bottom. The edge of the ditch formed the crest of the glacis. The powder used was the same as on the first experiment, with respect to quality; but the quantity was only five maunds, or 800 lbs. less than what was used on the former occasion.

This was a complete breach to the bottom of the ditch, forming a fine regular slope, down to half way across the bottom of the ditch, and no earth thrown back; every particle being propelled forward, and with such force across the ditch, as to strike and stick (many of them) on the face of the bastion, before the breach or entonnoir. The total length of the slope or talus down was 25 + 30, or 55 feet. The face of the counterscarp was much shattered for several yards on each side of the excavation.

The soil was sandy, both here and at the first mine.

This mine may be depended upon, as the powder was carefully weighed, and the distance of the chamber, height of the counterscarp, &c. carefully measured.

* The crater or funnel.

As the powder was country made, and very indifferent, double the quantity was used to what would have been, had the powder been English made, and good.

The powder was lodged in the chamber after the country manner; that is, not in a cubical box, but placed in dubbers with holes perforated in them; and loose powder and logs of wood put into the space between the dubbers. The mouth of the chamber and the gallery was stopped with billets of wood, wet and dry clay, or kneaded earth not too wet.

N. B. The line of least resistance in this experiment was longer than what Carmontaigne's rule gives, by 5 feet, or half as much again.

The explosion of the mine shook a bastion on which several officers stood to see the effect, at the distance of 70 yards.

Bastion blown up, 29th Dec. 1807.

Blew up one of the largest bastions to the eastward. Powder same quality as before; quantity used was 21 maunds, or 1680 lbs. Mine made as before described.

The bastion was completely blasted, the explosion bursting out the sides, and throwing up the top, so as to form a large basin or entonnoir in the centre of the bastion's ruins. The sides were blown out into a fine slope.

In blasting this bastion, it was discovered that it had its parapet thickened and strengthened with a row of large Jhow gabions, filled with hard rammed earth, and placed close behind the ancient parapet. The gabion and old parapet were then covered over on all sides with stiff earth, so as to form one solid parapet, totally concealing the junction of the gabions to the old parapet.

The explosion with this quantity of powder only gently raised up and shoved forward the bastion in mighty fragments. No earth was driven to a great distance, and a person might have stood within 20 or 30 yards without any danger.

December 13th.—This day Major General Dickens addressed the Adjutant General as follows.

"I have now the honour to enclose a return of the ordnance, &c. found in the fort of Gunnourie. There is every appearance of the enemy having quitted it in the utmost precipitation. I have not yet ascertained what route Doondia himself has taken, but it is supposed he has gone towards Hurdwar.

"He was only attended by his sons, and about 20 horsemen."

SURVEY REPORT OF THE GUNS AND AMMUNITION FOUND IN THE FORT OF GUNNOURIE, AGREEABLY TO ARTILLERY
PARK ORDERS OF THE 12th DECEMBER, BY LIEUT. COL. CLARKE.

Camp at Gunnourie, 12th Dec. 1807.

NAMES	No.	Bore		Length.		Diameter.		REMARKS.
		Ex. from length of the gun	Ins	Ins	Ins	Ins	Ins	
Brass Gun, Country 5-pownder,	1	4	5	0	4	0	3	5 $\frac{1}{16}$
Do. do. do. 11 "	2	4	4	0	4	0	3	2 $\frac{1}{16}$
Do. do. do. 5 "	3	4	6	0	3	9	3	5 $\frac{1}{16}$
Do. do. do. 2 "	4	2	5	0	2	4	2	8 $\frac{1}{16}$
Do. do. do. 21 "	5	3	7	0	2	3	3	1 $\frac{1}{16}$
<p align="center"> } Mounted on field carriages. </p>								<p align="center"> A few shot, and a quantity of powder stowed in jars, boxes, &c. in two magazines. Quantity not ascertained </p>

OBSERVATIONS.

In reviewing the operations for the attacks on Kamona and Gunnourie, we find the means used for their reduction to consist of five and a half squadrons of cavalry; two, subsequently five, and finally 10 companies of H. M. 17th Foot; six battalions of Native Infantry, including one composed of Native Grenadier companies; 220 Pioneers; 50 European, and 250 Native Artillerymen and Gun Lascars; in all between 5 and 6000 men, with an Artillery Train of six battering guns, five mortars and howitzers, and six brass 12-pounder fieldpieces, besides the 6-pounders then attached, two to each infantry battalion. Considering the limited size of these forts, the tranquillity of the adjacent country, and the small force of the rebels' garrisons, the besieging force would appear to have been nearly sufficient in cavalry and infantry; but the quantity of artillery, and number of artillerymen, pioneers, and miners, seems to have been extremely limited. The experience obtained at Bhurtpore, not three years before, had in vain shewed the necessity of furnishing a sufficient equipment in artillery on this occasion; and it cannot in excuse be urged, that our field magazines did not as then afford a larger train; for in the magazine at Agra alone, which was close at hand, in addition to what was used at these sieges, there was not less than 11 iron 18, and 7 iron 12-pounders, or a total of 18 battering guns, with two 10-inch, four 8-inch, and four 5½-inch mortars, and two 8-inch and two 5½-inch howitzers; while in regard to ammunition, there were 2348 shot for each of the iron 18-pounders, 2638 for each of the 12-pounders, 1213 shells for each of the 10-inch, 771 for each 8-inch, and 1060 for each 5½-inch mortar; with 771 for each 8-inch, and 1060 for each 5½-inch howitzer, and above 200,000 pounds of gunpowder.

These forts, from their limited extent, possessing no bomb-proofs, and having only soldiery within their walls, might certainly have been speedily reduced by means of a sufficient bombardment. We cannot therefore account for the inexcusable deficiency which existed in that portion of the siege equipment, when the mortars and howitzers in the Agra magazine, if added to those employed, might have increased

the means of bombardment from 5 to 17 pieces of considerable calibre.

We now proceed to take a short review of the mode in which the sieges of Kamona and Gunnourie were conducted, with the means in artillery actually employed.

The camp was pitched before Kamona on the 12th October 1807. On the 15th, three 12-pounder fieldpieces were placed in a position against the fortified garden, at 1056 yards distance. On the night between the 19th and 20th, a battery for three howitzers, and on the following night a battery for three 12-pounder field pieces, were established on the edge of the Kuttra, at a distance of 650 yards from the nearest point of the fortifications. The breaching battery for six 18-pounders was erected on the night next in succession. On the tenth day after encamping before the place, the enemy made a sally, and were for a moment in possession of the breaching battery, it having been thrown out upon the plain, within 300 yards of the fort, without any place of arms to contain troops for its defence. On the 23d, the several batteries opened, and the inner fort was immediately breached. The fire of the principal battery being subsequently directed against the defences of the large western and southern bastions in the fausebray. On the night between the 24th and 25th, an advance was made from the breaching battery towards the fort; but it was continued at the rate of only 60 yards in the 24 hours. By the 27th of October, the whole of the southern face, with the exception of the parapet of the fausebray, was in ruins; and such portions of the defences of the southern and western bastions of the fausebray as could be reached by a direct fire from the breaching battery, were also destroyed. On the night between the 27th and 28th, a battery for two 5½-inch mortars was established, about 200 yards from the fort; and on the 30th October, we find the Commandant of Artillery remarking, that *the breach had been practicable in every part for several days*. On the night between the 1st and 2d November, after nine nights and eight days labour, the advanced trenches had only reached the glacis, or about 500 yards of trench had been constructed in 200 hours. On the 2d November, the besiegers commenced the gallery of a mine, to blow in the counterscarp opposite the breach. On the night

between the 4th and 5th, the enemy sprung a countermine, and loosened the soil so much, as to occasion portions of the besiegers' unsupported mine gallery to fall in: on the two succeeding days after which, and not till then, their gallery was supported by planks. On the night between the 11th and 12th, the enemy broke in upon the mine gallery of the besiegers, and fairly smoked them out; and our mine gallery commenced on the 21, after 10 days and 10 nights work, was in consequence rendered totally nugatory, and was abandoned. On the 12th, the 18-pounder battery was directed exclusively on the southern bastion of the Rownee, and in the night an approach by sap was commenced, with the intention of forming a descent into the ditch, with the view of removing the enemy's mines from the counterscarp; but on the night between the 14th and 15th, just as the descent into the ditch was begun, the enemy sprung a counter mine, which killed the engineer, and totally destroyed the sap. In the night between the 16th and 17th, the besiegers, by great exertion, succeeded in springing a mine, to blow in the counterscarp; but in the apprehension of being countermined, it was not thrown sufficiently forward, and produced little or no effect, 11 feet of the glacis next the counterscarp remaining untouched after the mine had been sprung. On the 17th, the breaching battery was directed on this portion of the glacis to breach it; and on the 18th, the line of fire was directed, so as to perfect the breach in the scarp of the southern bastion of the fausebray, against which above 3000 shot were expended during the course of operations. An unsuccessful assault closed the events of the siege, having taken place 27 days after the opening of the batteries, and 20 days after the breach in the scarp was considered practicable. When we find 1111 shot fired against the garden, and 889 shells expended against the fort itself, and look at the weak profile of the former, and the limited extent of the latter, we naturally ask why such an expenditure of ammunition produced no corresponding effect. The distance of the battery at Baum from the works of the garden (1056 yards,) and the circumstance of the 12-pounders there, having been brass field-pieces, will account for the inefficiency of the former; and the fact of the 889 shells having been fired in variable quantities, in the course of 27 days, or at an average of only 32 shells for

every 24 hours the siege lasted, after the batteries opened, will evince, that what might have proved formidable in the aggregate, was inefficiently wasted in detail.—5086. 18-pounder, and 1197. 12-pounder shot, being a total of 6233, were fired on the breach and defences of the fort during the siege. The enemy were allowed 27 days to prepare for the assault; and although this delay and the proceedings of the besiegers invited them to stockade the breach, yet their want of materials, the limited numbers of the garrison, and there not being a sufficient number of common labourers or work people within the fort, did not admit of a defence, similar to that adopted with such success in the attack of the populous and extensive town of Bhurtpoor. The besieged acted, however, with considerable spirit, as evinced in their bold sally on the 22d October, their subsequent successful underground warfare, and their final novel arrangements for repelling the assault.

The miners of the besiegers consisted of only 30 or 40 men, hired hastily during the course of operations, on the emergency of the moment, the paucity of whose numbers rendered their progress extremely slow, and their duty very severe. They were opposed by an establishment superior in numerical strength, and composed of men formerly in Perron's service, known to possess a perfect practical knowledge of their art. Both parties pursued the rude and barbarous mode of mining peculiar to Hindostan. But the activity of Doondiah's establishment rendered every attempt of the besiegers to establish a mine abortive, and the British army suffered the severe mortification, of being beaten in a species of warfare, in which it was naturally to be expected, that the science, skill, and judgment of their engineers, would have shone conspicuous over native ignorance.

At Kamona, the three companies of Pioneers were left to carry on the whole of the works for the attack, with scarcely any assistance from the other branches of the army. They consequently suffered from undue exposure and fatigue: the whole of their European Officers were either killed or wounded. Only two officers of Engineers were present at the siege, one of whom was wounded on the 6th, and the other killed on the 14th November.

At Gunnourie, the work of the besiegers proceeded more slowly than at Kamona, although carried on with the assistance of the European troops and levied bildars. On the 23d November, ground was broken by cutting an approach of 130 yards in length; and on the 30th, or after 10 days work, only 800 yards of trench was completed. A battery for six 18-pounders was commenced on the night of the 3d December, finished on the night of the 4th, and opened on the morning of the 6th, or on the 14th day after the commencement of operations. A battery for four mortars and howitzers was commenced on the night of the 6th; the two mortars opened on the 8th, and the two howitzers on the 9th: 35 shells were thrown on the 8th, 90 on the 9th, 54 on the 10th, and 74 on the 11th, or 253 shells in four days, which caused the enemy to abandon their little stronghold on the 10th day after the commencement of the attack. If the same number of shells had been thrown in one day, the effect would have been greater, and the object would in all probability have been more speedily attained.

The military reader will no doubt remark the very objectionable mode, in which the approaches at both sieges were conducted, in long direct lines, which if prolonged, would have trenched close upon the glacis, and might have been easily enfiladed in their whole length, by any small work thrown out by the besieged.

In the instance of the assault of the breach at Kamona, as in the storm of the breach at Badajos, so well described in Jones' account of the war in Spain and Portugal, we may be allowed to say, that "the doors of success were certainly thrown open; but were so vigilantly guarded, the approach to them so strewn with difficulties, and the scene altogether so appalling, that instead of its being a disparagement to the troops to have failed in forcing through them, it is rather a subject for pride and exultation, that they had firmness to persevere in the attempt till recalled."—*Lieut. Colonel Jones' War in Spain and Portugal*, p. 238.

CORRESPONDENCE SUBSEQUENT TO THE CAPTURE OF GUNNOURIE.

Camp at Gunnourie, Dec. 14th, 1807.

SIR,

Although I have made regular and almost daily reports through the Adjutant General of the army, respecting our operations before the fort

of Kamona, and the assault which was made on that place on the 18th November, and the Field Army Orders which were issued by me after the possession of it by our troops, have also been submitted to your Excellency through the same channel, yet I consider, that now my more immediate exertions are not so much required, it may be satisfactory to you to receive a more detailed account.

I therefore take the liberty of stating, for your Excellency's consideration, that from the 12th October, the day on which we occupied our position for the siege, the approaches were carried on with regularity, so as to leave as little as possible to chance in our ultimate object of reducing the place.

The various modes of defence resorted to by the enemy, his more than once countermining us, and the very brave and determined resistance on the occasion of the storm, speak so strongly for themselves, that I do not presume too much in attributing a very great share of praise and credit to the whole of the officers and men, who after a length of exertion surmounted all obstacles. My opinion of the particular merits of individuals is so fully expressed in the Field Army Orders of the 20th November, that it would be unnecessary to recapitulate them here; but I can add, with great satisfaction, that from every officer and man of this army I have uniformly experienced alacrity, zeal, and military knowledge—not a murmur has ever escaped them, nor have I once had reason for censure to any man.

Perhaps no attack was ever led with more gallantry than that of H. M. 17th Foot, and they were as gallantly supported by the Grenadiers of the native troops.

The attack on the fortified garden, in which Lieut. Colonel Duff, who commanded it, gloriously fell, was conducted with equal bravery; and would, I have no doubt, been fully successful, but from the nature of the ditch, which, to any person not having been in this part of the country, is truly surprising, and a very formidable means of defence.

I shall do myself the honour to make a separate report of the fall of Gunnourie.

I have, &c.

His Excellency }
Lieut. Gen. Hewit, &c. }

(Signed) R. M. DICKENS, *Major Gen.*
Commanding Field Army.

Camp at Gunnourie, December 14th, 1807.

Sir,

I have the honour to state to your Excellency, that the troops under my command took possession of the fort of Gunnourie on the evening of the 11th instant. A return of the ordnance, &c. found in the place, has been transmitted to the Assistant Adjutant General.

I have the greater satisfaction in making this report, from the circumstance of our having suffered no loss on the occasion; and from the proof which it affords of the impression which must have been made on

the enemy by the gallant conduct of the troops at Kamona, and which I have no doubt accelerated the evacuation of the place.

It has not yet been ascertained what route Doondiah has taken, but he has probably crossed the Jumna.

I have, &c.

His Excellency } (Signed) R. M. DICKENS, Major General.
Lieut. General Herit. }

To MAJOR GENERAL DICKENS, *Commanding Officer of the Field Army, Delhi Residency.*]

SIR,

I have the honour to acknowledge the receipt of your dispatch of the 12th instant, and to request your acceptance of my most cordial congratulations on your being in possession of the fort of Gunnourie, without having received any loss.

2. From a letter which I received this afternoon from the Rajah of Bulhaur, most faithfully attached to the British government, and whose information I have generally found very correct, I have reason to believe, that on escaping from Gunnourie, Doondia Khan fled towards the Jumna, and that on the 12th instant, he crossed that river at the ferry of Guzunchoper, in the Pulwal district. It is added, that he appeared to be in great agitation, and in much distress; and that he was attended by forty horsemen, but had no baggage or property of any kind. It is conjectured that he is gone to Bhurtapore.

3. I sincerely hope that the flight of this restless rebel, and the evacuation of his strong places, may be the means of securing the future tranquillity of the Doab.

I have, &c.

(Signed) ARTHUR SETON, Resident, Delhi.

Delhi, 11th Dec. 1807.

The following is the route taken by Doondia Khan, on his quitting the fort of Gunnourie, the night of the 11th December, 1807.

From hence by Mangroul,	2½ coss.
„ by Purchasan,	4 do.
„ by Sarumpoor,	5 do.
„ by Tajepoor,	5 do.
„ by Gotencee,	1 do.
„ to Jetearee,	3 do.

Hurgovind the Zemindar gave Doondia Khan two men to shew him the road to the ghaut on the Jumna.

From Jetearee by Seroul, 3 coss.

to Gurburrah, 4 coss, where he arrived at day-break in the morning, and staid in the ravines on the banks of the Jumna the whole day. He was supplied with provisions and

forage from the headman of Gurburrah, Rambuccus Chowdree, who also gave him 20 matchlock men to escort him across the Jumna to Kotemun. Doondiah Khan left Gurburrah at four in the evening, crossed the Jumna to Attwah, and went on to Kotemun, eight coss that night. His intention was to go to Kaarree-ko in the Row Rajah's country, where he was to stay two or three days, and then go to join his family at Weir.

Camp at Gunnourie, }
17th Dec. 1807. }

(Signed) W. RICHARDS, *Capt.*
In Charge of the Intelligence Dept.

Camp at Gunnourie, December 15th, 1807.

SIR,

I have the honour to acquaint you, for the information of his Excellency the Commander in Chief, that I have received intelligence of the route Doondiah Khan took, after his evacuating Gunnourie.

He is stated to have got first to Secundra, where he remained a short time,—from thence to Tappul, in the territories of the Begum Sunroo; and he crossed the Jumna at Puntah-sanee-re Ghaat.

Some pits of grain have been discovered in the fort, which I have directed to be surveyed, and sold on account of Government. As the amount is not likely to be great, I would venture to solicit that it might be divided amongst the non-commissioned officers and men of the different corps.

Major Paton, }
Actg. Adj. Gen. &c. }
Calcutta.

I have, &c.
(Signed) P. M. DICKENS, *Maj. Gen.*

Camp at Gunnourie, Dec. 25th, 1807.

SIR,

I have the honour to transmit herewith the report of Colonel Horsford, commanding the artillery in the field, respecting the demolition of the three captured forts of Kamona, Anowna, and Gunnourie. In consequence of this report, I have thought it my duty to direct that the Pioneers, &c. should immediately commence with this fort; and I trust the expense will be very little, if any, to Government.

I have, &c.
(Signed) R. M. DICKENS, *Maj. Gen.*
Major Paton, }
Act. Adj. Gen. &c. }

MAJOR GENERAL DICKENS, *Commanding in the Field.*

SIR,

I have been honoured with the perusal of the public letter from the Deputy Adjutant General addressed to you, dated 11th December, 1807, respecting the demolition, and means of doing it, of the three captured forts of Kamona, Anowna, and Gunnourie.

I beg leave to propose, that—

1st. Part of the bastions or round towers, those at the angles, for instance, and especially those commanding the entrances, be blown up with gunpowder; making use of that found in the respective places, as far as it goes, and indenting on Allyghur for farther supplies, if required.

2d. That wide and deep channels be cut slopingly from the Rownees into the ditch, and from the country through the glacis, also into the ditch, regard being had to the lowest parts of the several places enumerated, in order that, in the next rainy season, the waters may be directed to, and be made to rush through these channels, where they will corrode and carry away the earth from the bottom and sides, and effect considerable breaches.

3d. The Rownee and sides of the ditch to be dug into, choosing such spots as appear of a sandy soil, by making long, large, and deep holes at bottom: the upper part will sink by its own weight, as soon as water gets into the ditch.

4th. The gates to be burnt, and gateways pulled down.

5th. The Pioneer corps, under their own officers, assisted by 100 bildars, and their own mates (one to every 20 men,) to be employed in destroying the works, if it be intended to destroy one fort at a time. But if all these forts are to be demolished at once, the Pioneer corps must be divided into three divisions, each assisted by one hundred bildars, as before mentioned.

6th. The miners attached to the Pioneer corps, and the extra miners now in pay, to be employed in blowing up the works.

7th. It is impossible to say what time will be employed in accomplishing the demolition of these forts. It will depend on the extent and number of the works, the nature of the soil, the number of the people employed, &c.

I have, &c.

Camp at Gunnourie, }
21th December, 1807. }

(Signed) J. HORSFORD,
Lt. Col. Comg. Art. in the Field.
Camp near Allyghur, Jan. 8th, 1808.

SIR,

I have received your letter of the 15th December, acknowledging the receipt of my express of the 11th of the same month, which announced our having taken possession of the fort of Gunnourie, and giving cover to the copy of a former letter, in which his Excellency the Commander in Chief desired to be furnished with sketches, plans, sections, and elevations of the captured forts.

In answer to that letter, I stated, that no engineer was in the field, and that the demolition of these places would be effected without any, or with a very trifling expense to Government.

I have the honour now to report to you, for the information of his Excellency the Commander in Chief, that the fort of Gunnourie was almost completely destroyed before the army marched, the bastions having been blown up, the gates burnt, and all the works destroyed.

Major Paton, }
Act. Adj. Gen. }

I have, &c.
(Signed) R. M. DICKENS, *Major Gen.*

Private.]

Muttra, January 13th, 1808.

SIR,

As there are many points which cannot well be introduced into a public letter, may I request your Excellency's indulgence for a few moments on the subject of my public despatch which accompanies this.

I am well aware, that through the medium of private correspondence, to which no responsibility is attached, assertions are made, and opinions sent abroad, sometimes from ignorance, sometimes from a worse motive, which are very injurious to the character of an officer commanding at a distance from Head Quarters. On the present occasion, I have heard of assertions, that on one side the fort of Kamona, there was *no ditch*, and that if the gateway had been the object of attack, there would have been no risk of a disappointment.

In answer to all this, I can only say, that it is not true; and I beg leave to repeat privately, what I assert in my public letter, the true cause of our loss was the spirited defence made by the enemy.

I shall only add, that if I willingly omitted giving every possible information on every part of the public service, I should consider myself entirely unworthy to hold any situation of public trust. I never have in any instance been guilty of such omission, and I trust I am incapable of it.

I remain, &c.

His Excellency } " (Signed) R. M. DICKENS.
Lieut. Gen. Hewit. }

Muttra, January 13th, 1808.

SIR,

I had yesterday the honour to receive your Excellency's letter of the 27th December, in reply to which I beg leave to acquaint you, that orders have been given to Lieut. Steel of Engineers to proceed to Kamona, for the purpose of preparing sketches and a plan of the fort, and the fortified garden adjoining.

So soon as these are finished, I will do myself the honour of forwarding them to Head Quarters, with such remarks as my knowledge of the fort, and the occurrences which took place on the 18th November, may enable me to furnish; but in the mean time, I request most respectfully to state to your Excellency, that after having given the most serious and attentive consideration to the subject, I cannot discover that any one point of information regarding that attack has been omitted on my part.

The loss which we sustained (which no person laments more than I do) is to be ascribed undoubtedly to the brave and determined resistance of the besieged, who fighting *under cover of their works*, must, if they behave with courage and resolution, always have the advantage over the assailants, who attack *openly* and *without cover*.

If I had been aware of any other obstacles than those I have mentioned in my despatches, I should eagerly have availed myself of the opportunity of pointing them out.

The plan ordered to be prepared by Lieut. Steele will shew the breadth of the ditch, and the height of the scarp and counterscarp, with all particulars of that nature; and I only avoided ordering the plan earlier, with a view of not incurring expense to Government

With the greatest respect, I have, &c

His Excellency } (Signed) R. M. DICKENS, Major Gen.
Lieut. Gen. Hewit. }

To JOHN THORNHILL, Esq. *Act. Secy. to Gov. Mil. Dep.*

SIR,

I am directed by the Commander in Chief to acquaint you, for the information of the Right Honourable the Governor General in Council, that Major General Dickens, by a letter dated Muttra the 11th instant, reported his return to that cantonments with the troops lately employed in the district of Coel, having sent on the Battering Train to Agra, to be again lodged in that magazine.

Adj. Gen. Office,
Pres. of Ft. William, } (Signed) J. PATON, A. A. G.
23d January, 1808. }

General Orders, dated 25th Jan. 1808.

The Governor General in Council has already expressed the high sense he entertained of the conduct, spirit, and discipline displayed by the officers and men serving under the command of Major General Dickens, at the reduction of the fortress of Kamona.

He is more anxious, on the final and successful termination of the operations in which these troops were employed, to convey to Major General Dickens the sentiments of warm approbation and applause so immediately due to the zeal, activity, and judgment which have distinguished the able conduct of the Major General, through every period of his command. He is happy at the same time in being enabled to extend the commendation already conveyed to the troops, for their distinguished conduct before Kamona, to the latest period of their services in the field.

The sentiments he there expressed have been happily and signally confirmed by the subsequent events; for it cannot be doubted that the noble example of courage, exertion, perseverance, and discipline afforded by the troops in the assault of Kamona on the 18th November, made an impression on the minds of the enemy, to which the facility of the subsequent successes can alone be ascribed.

The Governor General has much satisfaction in expressing his fullest approbation of the zeal, exertion, and ability with which Lieut. Colonel Commandant Horsford conducted the service immediately committed to his charge, in the command of the Artillery, and in the direction of the Engineer Department; and he is particularly gratified by the opportunity thus afforded him of renewing that testimony of approbation by which, on former occasions, the valuable services of that experienced and meritorious officer have been distinguished.

In conveying the cordial testimony of his approbation and applause to the troops at large, the Governor General in Council is persuaded, that he shall only meet the general sense of the army, in marking with peculiar notice the signal intrepidity and coolness which distinguished so remarkably the conduct of Lieut. Col. Hardyman, in leading H. M. 17th Regiment, and the detachment from the native corps, by whom they were so gallantly supported in the assault of the 18th November.

The Governor General in Council cannot, on this occasion, suppress his sentiments of profound affliction and regret for the loss of the brave officers and men, who fell gloriously for themselves in this contest.

They sustained the honour of their profession and of the British arms, to the latest moments of their lives, and will survive in the grateful and affectionate remembrance of their country.

The Governor General in Council, with the utmost satisfaction, requests that his Excellency the Commander in Chief may signify to Major General Dickens, and to the officers and troops engaged in the operations conducted by him in the District of Allyghur, the thanks of the Governor General in Council, and the high sense entertained by him of their distinguished gallantry, discipline, and services.

Muttra, January 30th, 1808.

SIR,

By the post of this day, I have had the honour to transmit to your Excellency's address a plan, section, &c. of the fort and fortified garden of Kamona, taken by Lieut. Steele of the Engineer Corps. It is perfectly correct, except where I have, in one or two instances, marked with a pencil. There ought to have been a place of arms at the angle where

our advanced parallel commences; and the 12-pounder battery should have three guns instead of two

Your Excellency will perceive, that the breadth of the ditch was fifty-four feet by twenty-one high, and the gateway is evidently the strongest part of the fort, as long as the enemy remained in the possession of the garden.

I have, &c.

His Excellency } (Signed) R. M. DICKENS, *Major Gen.*
Lieut. Gen. Hewit. }

To JOHN THORNHILL, Esq. *Act. Sec. to Govt. Mil'y. Dept.*

SIR,

I am directed by the Commander in Chief to request you will submit, for the orders of the Right Honourable the Governor General in Council, the enclosed copy of a letter dated the 31st ult. from Major General Dickens, commanding at Muttra and its dependencies.

I have, &c.

Adj. Gen. Office, } (Signed) J. PARK, *A. A. G.*
Presq. Fort William, }
13th February, 1808. }

Muttra, January 31st, 1808.

SIR,

As the forts of Anogna and Gunnourie have been completely demolished by the corps of Pioneer, under Lieut. Swinton, I beg leave to suggest, for the consideration of his Excellency the Commander in Chief, whether the charge of them might not be delivered over to the Civil Magistrate of the district in which they are situated, and the same with respect to Kamona, as soon as the demolition of the works there shall be completed.

I have, &c.

Major Paton, } (Signed) R. M. DICKENS, *Major Gen.*
A. A. G. &c. }

To J. THORNHILL, Esq. *Act. Sec. to Govt. Mil'y. Dept.*

SIR,

I am directed by his Excellency the Commander in Chief to request you will submit to the Right Honourable the Governor General in Council, the accompanying letters to his Excellency's personal address from Major General Dickens, late commanding in the field, and bearing date the 13th and 30th ult. together with the plan of the fort and fortified garden of Kamona therein referred to, which his Excellency considered it his duty to call for, with the view of putting Government in possession of the fullest information with respect to the nature of the obstacles which our troops had to encounter in the siege of that place.

I am also directed to acquaint you, for the information of his Lordship in Council, that reports have been received from Major General Dickens of the demolition of the forts of Kamona, Gunnourie, and Anouna.

I have, &c.

*Adjutant General's Office, }
Presy. of Fort William, 27th }
February, 1808.*

(Signed) J. PATON, A. A. G.

Camp at Kamona, March 23d, 1808.

MAJOR FAGAN, *Acting Adjutant General.*

SIR,

On my return from my tour of inspection at the different stations and posts of the army on the frontier, I have taken occasion to look at the three forts, viz. Gunnourie, Anouna, and Kamona, which have been destroyed by the Pioneer corps under the direction of Lieut. Swinton; and am happy to report, for the information of his Excellency the Commander in Chief, that it has been done in so effectual a manner, that I consider the continuation of a military force in them as no longer necessary; but if I was authorized to deliver charge of them to the Magistrate of the district, a whole company of the 2nd Battalion 3rd Native Infantry would be added to the strength of the Garrison at Allyghur.

I have, &c.

(Signed) R. M. DICKENS

JOHN THORNHILL, Esq. *Act. Sec. to Govt. Mily. Dept.*

SIR,

I am directed by the Commander in Chief to transmit to you the enclosed copy of a letter from Major General Dickens, dated 23rd ultimo, which you are requested to submit for the information of the Right Honourable the Governor General in Council, with his Excellency's recommendation that the three forts of Gunnourie, Anouna, and Kamona, whose complete demolition is reported in the Major General's letter, may be delivered over to the Magistrate of the district, the occupation of these places in their present state by a military force being no longer necessary.

I have, &c.

*Adjutant General's Office, }
Fort William, 7th April, 1808.*

(Signed) G. H. FAGAN, A. A. G.

To JOHN THORNHILL, Esq. *Sec. to Govt. Mily. Dept.*

SIR,

I am directed by the Commander in Chief to acquaint you, for the information of the Right Honourable the Governor General in Council, that Major General St. Leger has reported, that the dismantled forts of Kamona, Anouna, and Gunnourie, have been delivered over to the civil

authority, conformably to the instructions communicated in your letter, under date the 8th April last.

I have, &c.

Adjutant General's Office, } (Signed) G. H. FAGAN, *A. A. G.*
Fort William, 21st June, 1808 }

Doondia Khan, after having made his escape into the Punjab, is understood to have entered into the service of Runjeet Sing, and died shortly afterwards. His son Rummust Khan returned within the Company's provinces, and appealed for protection to his Excellency the Marquess of Hastings, having followed the Governor General to Calcutta, where he now (1810) resides, waiting the result of this application.

The attack on Adjeeghur in Bundelcund, will be given in our next.

The compiler of the Bengal Sieges takes this opportunity to solicit communications, on the present Siege of Bhurtpoor. If sent, addressed to the compiler, care of Captain Parlbv, Allalabad, or to Mr. S. Smith, Hurkaru Library, Calcutta, they will be sure to reach him.

ARTICLE II.

OBSERVATIONS

ON THE

PERSONAL EQUIPMENT, GENERAL ORGANIZATION, PARTICULAR SERVICES, AND DIFFERENT TACTICS OF THE REGULAR CAVALRY, AND IRREGULAR HORSE

OF THE

BENGAL ARMY ;

With some Remarks on the Works of Colonels Blacker and Fitzclarence, when treating on those Subjects.

1. THE regular cavalry on this establishment, may be considered as that branch of the Bengal Army, which has least participated in the improved equipment and organization of late years introduced into our military service : and it may with truth be said, that with the exception of some slight alterations in the dress and paraphernalia of the trooper, few attempts have, since its original formation, been made, to render this army so serviceable to the state as it might be.

2. Experience in the field, has no doubt evinced its deficiency, in many essential points of interior economy ; but we believe this experience has not failed to shew the propriety of a personal equipment and organization being granted, better adapted than the present to the nature of the country, and to the enemies with whom our cavalry may eventually have to contend.

3. The Bengal cavalry, when first embodied in 1796, was equipped with reference to the system then in vogue in England ; and their arms and horse accoutrements are still, with few modifications, exactly those of a British light dragoon, of the last years of the past century.

4. During the wars which followed the French revolution, the cavalry of England underwent many changes, and, like that of the principal powers of Europe, was completely, though gradually remodelled, and is now formed into four distinct classes, viz. Heavy Dragoons (three regiments of which wear the cuirass;) Light Dragoons, Hussars, and Lancers.

We think we may with justice ask, why one class of regular cavalry should still be adhered to in India?

5. The late Pindaree war* may be quoted as unequivocally exhibiting the efficiency of our regular cavalry, to overtake, disperse, and destroy a horde of armed marauders,—a service which could only have been effected by troops willing to suffer the greatest privations, to undergo the utmost fatigue, and capable of executing the most rapid marches; but although the Pindaree campaign exhibited the high state of discipline prevalent in the mounted branch of our army, by which, when requisite, it was enabled to move with surprising celerity, yet in all our actions with the Pindarees, there was no contest for superiority. Anxious to escape with their booty, these banditti seldom made any determined or collective stand; but, on the contrary, when surprised by our troops, immediately dispersed, every man attempting to escape individually, only the worst mounted being overtaken by our troopers.

6. The affair of Nagpore, so creditable to that portion of our regular cavalry engaged, is one of many proofs, that a full sense of danger only serves to stimulate brave men to additional exertion. On that occasion, a noble spirit animated our little band of heroes, who, unflinching by an immense disparity of numbers, made a well-timed and resolute charge, which changed the face of affairs, and rendered the conquered conquerors†.

* The 4th Regiment of Madras Cavalry, under Major Lushington, in 1816, made one of the most rapid marches recorded in Indian warfare, (53 miles in 14 hours,) and subsequently destroyed a large body of Pindarees. The 4th and 5th Bengal Cavalry also, on several occasions, fairly outmarched these marauders. •

† At this moment, Captain Fitzgerald, reinforced by a Native officer and twenty-five troopers of the Madras Body Guard, charged an immense body of the enemy's best horse, and having captured their guns, which were immediately turned upon them, he remained in possession of the plain, covered in every direction with the flying enemy.—*Extract from Lieutenant Colonel Scott's dispatch.*

Captain Fitzgerald led the first troop to the right, Lieut. Hearsey led the centre troop straight to the front, and Cornet Smith the third troop to the left, occupying in this way as extended a front as possible, and doing all the execution in their power, which was, however, inconsiderable, from the very jaded state of the horses. The centre troop, however, captured two heavy brass guns, with all their ammunition: upon

7. It is questionable, however, whether this result would have been obtained, had not the fire of the captured guns been judiciously opened on the enemy, by the officer who took them (who dismounted his men for that purpose,) for this alone prevented the enemy rallying, and surrounding their gallant opponents. The dismounting of our regular cavalry to act on foot, is, however, seldom practised; the equipments of our troopers being ill adapted to such an operation.

8. It has long been customary to decry the Irregular Horse of India; but their conduct in the field has proved, that when they do make a collective stand, they are by no means a despicable enemy.

9. At the memorable battle in Rohileund, of the 20th October 1794, our regular cavalry was completely thrown into confusion by the charge of the Rohillah irregular horse, and basely fled before them from the field. When the British army was before Deig, Holcar's horse charged through the intervals of our 2d and 5th Regiments of regular cavalry. The conduct of Holcar's irregular horse, in Monson's retreat, was on some occasions very determined, several of them having been shot in our sepoy battalion squares.

10. In Colonel Blacker's account of the late war, he remarks, that "the conduct of the irregular horse in the service of the native powers, was *contemptible in every instance since the commencement of the campaign.*" (Vide Blacker, *Mharratta War*, p. 318;) yet instances are recorded in this very work, which testify to the contrary.

11. The advance of Moro Dixit's horse at Kirkee, (designated by this writer as a brilliant enterprize,) and the charge of Gokla's cavalry* at Ashtee*, seem both to have these Captain Fitzgerald collected his troopers; and when the enemy, now somewhat recovered from their panic, were about to surround this little band, separated nearly two miles from the detachment, two guns just taken were manned, and opened upon them, in such a manner, that the whole body of elephants, camels, and horses, a second time retreated out of the reach of shot.—*Extract from a letter signed Justitia, in the Calcutta Journal.*

* At Ashtee, the squadron of the 22d Dragoons charged rear rank in front, a circumstance which shews the urgency of the case, but which is not even mentioned by Colonel Blacker, who I conclude was not aware of the fact.

been overlooked, when so unqualified a censure was penned. In both affairs, the native irregular horse attacked resolutely, and their leaders gallantly fell at the head of their men.

12. At Kirkee *, the British were aided by artillery ; and at Ashtee, the Galloper guns did execution. On the latter occasion, General Smith was wounded, and there appears to have been some confusion which prevented the enemy being followed up.

13. In the Journal of the siege of Bhurtpoor, given to the world by a brother officer, in the 5th number of the Bengal Military Repository, there is the following passage, page 47.

“ While the columns of infantry were attempting to enter the breach, the Commander in Chief, with the whole cavalry, had moved out about two miles, to the right flank of the camp, in order to prevent the confederate force of the Rajah, Holcar, and Meer Khan, from interrupting the attack. The number of their cavalry on this occasion was immense ; the plain all round was covered with them. Some skirmishing, and rocket firing, on the part of the Mharrattas took place, and a party of their horse stood steadily at 600 yards, under the fire of our guns. Having prevented any attack of the camp and breaches, and killed about 50 men by cannonade, the cavalry were withdrawn into camp by sunset, followed closely up by the enemy, who were only kept off by the six horse artillery guns in rear of the column, maintaining a sharp retreating fire on the *prolonge** the whole way.”

From this it would appear, that the enemy's horse shewed some disposition for attack, emboldened, no doubt, by the repulse of our troops on the assault of the place that day.

14. Irregular Horse is a term used to designate the native cavalry of India, armed and equipped according to the custom of the country : and to shew how imperfectly their organization is understood, I quote from Colonel Blacker's work the following description of the Mharratta cavalry.—

“ The principal division of the cavalry is into Russalabs, which may be considered on the footing of a regiment. Their strength is indeterminate, depending entirely on the influence and the rank of the nobleman who commands them : any inferior division, such as a Braderree, or association under a Jemadar, is equally indefinite. The men who serve on horseback are Mahomedans, Rajpoots, and Brahmins. The pay of a private, finding his own horse, varies from twenty to fifty rupees a

* Colonel Fitzclarence, in alluding to the affair at Kirkee, states, that Moro Dixit's horse cut at our troops in the ranks with their swords. I conclude that this was stated to the Colonel when he visited Kirkee, a short time after the battle, in company with Colonel Burr.

month. It is frequently regulated by the appearance of the man, and the goodness of his steed. As the continuance of the pay depends on the service of the one, as well as of the other, it is not extraordinary that the safety of the horse should never be unnecessarily endangered. This circumstance appears to be one of the principal vices in the cavalry service of the native powers. They are equipped with a fire arm, and a weapon of cut or thrust, the former of which is a blunderbuss, pistol, or matchlock, and the latter a lance or sabre, but the lance and blunderbuss never go together."

15. In this general classification is included every description of Mharratta horse, from the well paid Bhargeer*, to the wretched unpaid Pindaree; and this fact ought to have been held in mind, before any *general* inference was drawn. The latter are certainly despicable enemies; and on some occasions, a squadron of our regular cavalry has put thousands to flight†; but the former have often evinced the most resolute courage.

16. The native horse of India admit of four distinct classes. First, Eckas, or single horsemen, who act individually, frequently protected by chain armour, quilted cotton garments, with steel caps, chain twisted in the turban, and mail armbands or gloves. This class is rare, and they receive pay agreeably to their efficiency. The Eckas may be either Bhargeers, or Khoodasps, and their pay has no limit‡. These are the champions of native armies, who challenge to single combat, and are always conspicuous in the front, or on the flanks of a native force.

* Bhargeer is a term, used to designate a horseman, whose horse belongs to his chief or employer, in opposition to the Khoodasp, who is mounted on his own horse. Khoodasp is a Persian derivative, from Khood, one's own, and asp, a horse.

† 4000 Pindarees fled, in 1817, before a squadron of the 4th Regiment of Bengal Cavalry, and two Russallahs of Robert's Horse, under Major Ridge, near Lohargong. 300 of the Pindaries were slain.

‡ "I have seen Eckas paid from 5 to 10 rupees *a day*," is the remark of an officer who had passed many years of his life in the native service: but immense rewards are bestowed on the Eckas, at the discretion of their employer. It was one of these Eckas that behaved so bravely at Ufzalghur, and was at last taken, after he had twice charged through Skinner's corps. His horse was killed, and he himself received seven sword wounds: he was however cured, presented with a handsome Khe-laut, and sent back to Meer Khan by Lord Lake.

17. The next class is the household cavalry. These are the Khass Russallahs of the Moguls and Patans, the Khass Paghahs of the Mharrattas, and the Beer Dulls of the Hindoo states, and are all Bhargeers, being mounted on horses the property of the state, or power employing them. Some of these are also frequently in armour: they are generally equipped agreeably to the usage of the tribe, or sect to which their chief belongs.

18. The third class is the Sellidar horse of the Delhkan, and Khoodasps of Hindoostan. This class is the most numerous, being hired from their respective leaders at a stipulated price. Each chief pays his own men, and of these generally two thirds are Bhargeers, belonging to himself and officers, with some good Eckas, who receive additional pay.

19. The fourth and last class is the Pindaree, or unpaid horseman. This class is composed of adventurers, mounted on the worst horses in India; and they are utterly contemptible as an enemy, being engaged solely to burn and destroy a country, and never to fight.

20. The Bhargeer system chiefly prevails in the armies of the native powers. It was much in force in the irregular horse of the Bengal army, but has of late years been considerably discouraged.

21. The well armed Eckas, and Bhargeer horse of India, bear, in some points, a resemblance to the Mamelukes of Egypt, although perhaps inferior to them as cavalry. The fact of the Bhargeer Russallah of Skinner's Horse, having pursued, and put to the sword, a portion of their own corps, that deserted with (on the part of the Bhargeers) a comparatively trifling loss, strongly illustrates the superiority of this class over their comrades.

22. In our regular regiments of native cavalry, all may be said to be Bhargeers in the pay of Government, and consequently the Indian native system is not quite so anomalous as has been represented.

23. It is singular, that Colonel Blacker does not even allude to the Bhargeer system; indeed he does not seem aware of its existence, for he appears invariably to consider the horse as the property of the trooper, and points out this cir-

cumstance, as being the origin of the inferiority of the irregular cavalry, generally.

24. Colonel Fitzclarence also observes :—

“ The irregular cavalry throughout this country, being mounted on their own horses, is one of the principal causes which militates so much against them ; as should they in action or otherwise lose their horses, they lose their bread, the dread of which must be a great drawback on a man’s exertions under fire. Our regular native cavalry, having no feeling of this description towards their horses, are by no means as sparing of their own persons. Colonel Skinner has to a certain degree obviated this feeling in his corps, by establishing a fund for saving a small monthly sum from the pay of each soldier, who comes, on this, for a part (I believe only a part) of the value of his horse, should he be lost. These Hindoostance horsemen receive twenty-two rupees a month, and for this sum, mount themselves, provide their own food, and find provender for their charger, and ammunition. This would appear a very small sum in Europe, taking the rupees at two shillings six pence. The expense of a horseman complete per annum, would be under thirty-six pounds. The generality of them, however, are little better than Pindarees ; but they are of service as escorts, and when in our own provinces, assist the police. Those I saw appear to be under no sort of discipline, and are by all accounts unprincipled barbarians. I was informed of a circumstance, which placed them in a proper light. Near Punnah, one of these unconscionable ruffians, having a dispute with a man and his wife, about the payment for some trifle, seized their daughter, a girl of thirteen years old, threw her across his horse, and fairly carried her off. On complaint being made to the officer commanding at Lohargong, he sent after the detachment of horse to which the offender belonged, who receiving information of the pursuit, left the poor girl in the plain, and was never discovered. In our own provinces they cannot commit these excesses, our police being too active, and punishment too certain.”

25. But it is subsequently noticed by this author, that out of a party of 200 of the Nizam’s reformed horse, composing his personal escort, he was informed by the Jamedar, that with the exception of 20, the whole were Bhargeers, mounted on horses the property of their commander.

26. Before a general stigma was attempted to be fixed on the irregular horse of the Bengal army, surely some better proof of their misconduct was required than the mere wanton violence of an individual. If the characters of our regular corps were determined by such a rule, where is the regiment in India that may not be reproached with some case

of violence or barbarity? Our European soldiery would I fear lose much by a comparison, should such a criterion of character be assumed. But the unqualified censure thus passed on our irregular horse, can only produce a smile at the self-sufficiency of the good natured military traveller, whose opinions are no doubt sincere, though too often superficial, and who on many occasions misapplies the notions he picked up in Spain.

27. The experience of a few years residence in Calcutta, in the situation of Aid-de-camp at Government house, and a journey overland from Lord Hastings' camp, where there happened to be a few irregular horse, render it difficult to understand what opportunity Colonel Fitzclarence could have had for justly estimating their character. He certainly can testify to the appearance of the small party that escorted him, but nothing farther; and, if I may judge by the plates in his book, I should assert, that he never had seen the Bengal irregular horse; for he has given them fancy clothing, and dressed them in fashionable Wellington overalls!

28. The irregular horse in the pay of the Bengal Government, are, in regard to military formation, organized on a system approximating to the regulars. Each corps is divided into Russallahs or troops; each Russallah has its Nishan Burdar, (standard-bearer,) and Naggarchee (kettle-drummer.) The Rissaldars perform the duties of Subadar and Jemadar, and the Dufladars and other subordinates are the non-commissioned officers. The troopers are all armed with the matchlock, sword, and shield. The native officers of all ranks, instead of the matchlock, carry the Bala, or Indian spear. In Skinner's corps, there is a complete uniformity in dress and equipment; *but each horseman is ever allowed to consult his own choice in the kind of sword he may prefer.* This corps can also perform all our regular evolutions.

29. The true Hindoo mounted soldier, is the Rajpoot: of these there are four tribes, Raitore, Kutchwahyh, Harree, and Bundelee. The Raitore Rajpoot would degrade himself by serving as a foot soldier; and in Rajpootanah, the Rajpoot horsemen are united to their chiefs by all the ties of feudal vassalage*. The Mharrattas and Seiks also serve chiefly on

* The religion of a Rajpoot prompts him to consider death on the field of battle, as insuring to him everlasting happiness. When Zalim Sing

horseback : these, with the Moguls and Baloaches, Rohillahs and other Musselmen, now compose what is termed the irregular horse of India.

30. The observation of Marquess Cornwallis, that it was better to fight than to pay irregular horse *, was, I conclude, founded on his experience of the utter uselessness of our Mharatta and other auxiliaries, during the different wars in the Carnatic, and seems evidently meant to apply to the absurd practice of retaining in pay a disorganized mass of Indian cavalry, under the command and controul of their own chief, on whose faith, either as to numbers, or fidelity in war, dependance can seldom be placed.

31. It was reserved for the discrimination of Lord Minto, and our late noble Governor General, the Marquess of Hastings, to exemplify the utility of modifying the too rigid application, or rather the misapplication of this rule, which caused Sir George Barlow to discharge from the Bengal army all our irregular horse, soon after the termination of Lord Lake's campaigns. Skinner's Horse, which had "done the state good service," was disbanded by Sir George in 1806 in common with the rest; but the Khass Russallah, consisting of 200 Sowars, was, at the recommendation of Lord Lake, taken into the pay of Government, and placed under the orders of the Resident at Delhi.

32. Stationed at Paniput and Sowanput, the utility of these Russallahs was soon manifested, by the total destruction of the armed banditti, who at that time infested these and the other purgunnahs contiguous to the Delhi territory, and rendered the lives and property of all travellers unsafe.

33. In 1809, the corps was by Lord Minto again embodied, and placed under the command of Colonel Skinner; and were

of Kotah, supported by British troops, overpowered the Rajpoots of Harrowtee, the brother of the Raja, Prethee Sing, a young Rajpoot of the Hara tribe, was mortally wounded, and left on the field. He never uttered a complaint, but after making acknowledgments for the kindness of the British Resident, said he gloried in dying in the defence of his brother's proper inheritance.

* This maxim could not have been drawn from the conduct of Tip-poo's cavalry, as the repulse of the whole of the British at Bangalore by Tippoo's horse, is publicly recorded by his Lordship.

I to detail the various occasions on which this distinguished body has acquired its well merited reputation, the limits of this paper would be greatly enlarged: I shall particularize only two of the most prominent.

31. When the British detachment under General Smith was attacked by a portion of Meer Khan's troops, at Afzulghur, the troop of horse artillery was in front; and when the Ally Gole's charged its guns, a squadron of his Majesty's 8th Dragoons, and the Khass Russallahs (Bhargeers) of Skinner's Horse, by a prompt and decisive advance, completely destroyed this body of the enemy. But for this timely charge, the artillerymen would have been cut down at their guns, as their swords were fixed to their saddles*.

35. Some of the British cavalry had been already driven back through the intervals of the guns; and it is generally believed, that Captain G. Deare, of H. M. 8th Dragoons, foreseeing the danger, gave the word to his troop to charge, without waiting for orders.

36. The Khass Russallah of Skinner's corps, (Bhargeers) came in contact with Meer Khan's Eekas, and after cutting down a number of them, took two chiefs prisoners, and captured many standards: this was performed in front of the British detachment.

* The swords of the Bengal horse artillery, are the same as those in use with the cavalry; and from the length and weight of the steel scabbards, are hung by sling belts. consequently, on service, it has been found expedient to fasten them to the saddle, as otherwise the artillerymen could not dismount without some difficulty and delay. This arrangement, dictated by experience, has this disadvantage, that when the guns are prepared for action, those men who are dismounted have no side arms; and if an enemy charges the battery, as the artillerymen cannot leave their guns for an instant, to obtain their sword or pistol, they have not the power of defending themselves. To obviate this, would it not be proper to abolish the cavalry sword and sling belt, as inapplicable to the horse artillery, and to substitute a short serviceable native blade, in a leather scabbard, which might on service be fastened light to the hip by a waistbelt, which would give the artillerymen an opportunity of defending their guns, even should an enemy get in amongst them? This would render the horse artillery less dependant on the timely assistance of other corps, and contribute to give additional confidence to the men, in the hour of danger.

37. The other instance was the gallant defence made by the late Major Skinner, with 300 of his brother's corps, in the Serai of Sumbul. Here one third of his men were Bhargeers. This small band was attacked by the whole of Meer Khan's troops, who attempted in the first instance to tamper with the men, offering them service, and an advance of pay, if they would deliver up Major Skinner: this offer was however refused with the contempt it deserved; and the enemy, after repeated attacks, were in every instance repelled.

38. At the battle of Corygaum, the conduct of the irregular auxiliary horse, under Lieutenant Swanston, was most exemplary: their loss in proportion, exceeded that of the Regular troops. The 2d Battalion 1st Bombay Infantry consisted of about 500 men; the irregular horse of about 250: the former had 163, the latter 96 men killed and wounded, and nearly all their horses destroyed. Numerous examples of the good conduct of the irregular horse in the British service are detailed in Blacker's Mharatta war. The creditable behaviour of Scindiah's contingent at Goruckpoor, the attack of Trim-buckjee's adherents by the Nizam's reformed horse*, the bravery of the irregular horse attached to the 4th division under Captain Spiller, and of Robert's Horse near Chulna, shew, that when properly led, by brave and intelligent officers, the irregular horse, described as contemptible in a native Indian army, become highly efficient.

39. The records of the Bengal army exhibit many instances of the bravery and general good conduct of our irregular corps; but in the cases now detailed, and alluded to, no regular troops could possibly have behaved better.

40. It may be urged, that on some occasions, our irregulars have deserted to the enemy. It will, however, on investigation, be generally found, that when this occurred, these troops were either hastily collected, or badly organized; and in the instance of some of Skinner's men, once leaving their post, it must be recollected, that this blot on the character of the corps was amply effaced by the noble conduct of the Khass Russallah which pursued and destroyed the fugitives.

* The reformed Sellidar horse of the Nizam, under Captain Davis, have been engaged in several brilliant affairs.

41. The trying situation in which the irregular Rohillah Cavalry were placed during the Barreilly insurrection*, and the testimony borne to their attachment to Government, is honourably recorded in the following extract G. O.

Extract G. O. 27th May, 1816.

“The native commissioned officers and men, in addition to the boast of brilliant spirit, shewn by them on this occasion, have to pride themselves on the generous disdain with which they spurned all the artful, but impudent seductions, employed to debauch them from their duty.”

42. Here was a Musselman irregular corps, composed chiefly of the natives of Rohilcand, and having many of the inhabitants of the town of Barreilly in its ranks, embodied only a short time before the rebellion broke out, drawing their swords against relatives and friends, and rejecting with disdain all attempts to induce them to compromise their allegiance to the state.

43. When the Bengal sepoys, by orders from the Honourable Colonel Monson, of His Majesty's 76th Regiment of Foot, retreated so hastily before the army of Jeswunt Row Holkar, a body of irregular horse, under the gallant Lucan†,

* The rebels, on this occasion, were excited to a pitch of frenzy by the fanaticism of an old priest, whose sacred character, and venerable appearance, was artfully employed to mislead the multitude; but the fidelity of the Rohillah horse was not to be shaken by such means, and they sacrificed their religious prejudices, to preserve their honor as Company's soldiers.

† To evince in what light Lucan was considered among the natives, we may here quote the expression of the accredited agent of Holkar, in a letter to his master:—"There are no troops of the enemy in this country just now, and the whole is bare of soldiers. If you put *Lucan* to death, and advance, you will conquer the whole country without a battle." And again: "If the conquering army comes to this quarter, *there is nobody but Lucan who has the power of opposing it.*" Holkar thus noticed the results of the action: "I send an answer to the Rajah's letter, which you will deliver to him secretly, and inform him personally of all the particulars of the battle, and defeat of the enemy, *the taking of Lucan the European*, and the Nawaub Fyze Tullab Khan of Bhari-tech prisoners, and son of Rajah Heera Sing of Bullum Ghur, and others, being killed on the field of battle; all which circumstances you will learn from the writing of Moonshee Letehmun Sing; and getting the Rajah to be prepared to act in my service, you will represent to me what his intention and inclinations are."

was left in rear* to oppose and delay the advance of the enemy. Lucan's person was well known to Holkar's troops, as he formerly served in Perron's brigade, in Scindiah's service. Abandoned to his fate, this brave man fought to the last; but being overpowered by numbers, was, after being wounded, taken prisoner, and subsequently died at Kotah. At this time there was nearly 20,000 irregular horse in the pay of the Bengal Government, and some of them were certainly a source of immense profit to individuals; for the pay due to all deserters was at that period considered a clear perquisite, and the army was many months in arrears. These levies were composed of men chiefly of the same description with those in the enemy's camp, with considerable exceptions, little better than mere Pindarees: hence the desertion "*en masse*" of the hired plunderers sent to co-operate with Colonel Monson's detachment. The system of taking indiscriminately the refuse of a Mharrattah army into pay, and placing them under officers *unknown to the men*, occasioned no doubt a great and useless expense to the state.

41. But the irregular corps of the present day are on a very different system, and form a most efficient portion of our Indian army.

* Literal version of a written statement in Persian, drawn up by some Sowars who were engaged in the action at Mokundra.—In the month of May, in the hot season, General Monson Bahadur, with his English troops, and Lucan Sahib Bahadur, with his regiment, and others, Hindoostances of Pherut Jan and the Kotah Rajah, and the Chief of Kary and of Bulunghur, and Baboo Scindeah, were pursuing the army of Jeswunt Row Holkar. We halted one day at Rampoorra, and the next day we marched to the Chumbul, about two coss from Rampoorra, and again halted about an hour from sunset, when the news was, that the Moha Rajah Jeswunt Row Holkar, had turned back for the purpose of fighting the English: at this intelligence the English and Hindoostanee troops prepared for battle, and stood to their arms all night. The next morning at dawn, the English troops marched to the Mokundra pass, to the Broogh, and Lucan Sahib Bahadur then gave orders that the regiment and Hindoostanee Sowars should follow after the battalions. These orders were accordingly obeyed. On the road, we came to a nullah. Lucan Sahib Bahadur, and Faiz Tullab Khan, and Baboo Scindiah Bahadur, with their troops, and the rest, crossed the nullah after the battalions; and these chiefs dismounted, and sat in the shade under a tree. The battalions of the English were to cross in front. When the Sowars of Jeswunt Row Holkar

45. Although in the foregoing observations I have attempted to shew that the organized corps of irregular horse have done the state some service, yet I have no wish to over-rate their value.

46. Too confident in our military power, and too much prejudiced in favour of our own system, I do however think, that we, in common with other European nations, too often despise all troops conforming to a system at variance with modern tactics. It seems to have been this feeling that induced the French to condemn the Egyptian Mamelukes; but after the battle of Berandra, their Light-Cavalry were found unequal to cope with them.

were seen on the other side of the nullah, 70 Sowars of Lucan had gone to drink some water, and smoke near the village close to the nullah, and the Pindarees of Jeswant Row carried off their horses and things. When Lucan Sahib saw the Pindaree Sowars, he went to join his regiment, and the Pindarees' horses followed; and the troops of Jeswant Row Holkar were seen on every side, surrounding, as Lucan Sahib Bahadur formed line with his own corps and the other Hindoostanee troops, and fired the guns at Holkar's troops: then Baboo Scindiah went over with all his troops to the enemy, and Faiz Tullab Khan of Barratch dismounted his horse; when his servant Jangir Khan took him by the hand, and said, Mount your horse, as otherwise you will be laid down, as we are surrounded by horse. Having said this, he took his master's hand, and assisted him to mount. Faiz Tullab Khan being mounted, rode after the battalions. At this time, a ghole of Holkar's horse, with numerous standards carried on elephants, were in sight, and came in front of our regiment. When Lucan saw this, he mounted his horse, and with Ram Sing, Newel Sing Shekawant, a Sirdar of the Thakur Abhie Sing of Kheree, and Perthie Rajah of Bulumghur, and the Sirdar of the Kotah Rajah, with their troops, followed the battalions. At this time the enemy's horse charged down upon us, and we, slackening our reins, charged also; when the Tulwar then came into play. Perthie Sing, Rajah of Bulumghur, and Ram Sing and Newel Sing, and the Sirdar of Thakeer Abhie Sing, Shekawant of Kheree, and the Sirdar of the Kotah Chief, did good service; and Lucan Sahib Bahadur was speared in the body, and seized by the enemy, and taken prisoner; and many of our horsemen were killed, and many wounded, with bloody faces. Faiz Tullab Khan, who had quitted the field before the battle, was wounded and taken prisoner, two coss from it, by the enemy. The troops of Lucan Sahib, and of Bharritch, and of Shekawant, and of Perthie Rajah of Bulumghur, and of Kotah, were all destroyed and plundered, and fled. About 200 Sowars reached the Mukundra pass, where the English battalion were. Lucan Sahib Bahadur, being mortally wounded, died at Kotah.

47. Differing as I do with an Indian cavalry officer of rank, and scientific acquirements, as to the causes that have enabled a comparative handful of our regular cavalry, on some occasions, to defeat large bodies of Indian horse, I deem it but fair, that the arguments adduced by this writer should be stated in his own words, more particularly as there is an ingenious attempt made to prove, that our tactics alone are the cause of our success.

48. *Blacker's Mharratta War*, p. 188.

"To an eye unaccustomed to contemplate large numbers of native horse, in solid, though irregular bodies, they must appear a formidable object for the attack of a few squadrons; but a consideration of their composition removes the impression, while to an officer like Major Doveton, who had served long in India, habit had rendered such reasoning superfluous. An allusion has already been made to that want of sympathy between the parts of an irregular body, which prevents them from depending on the assistance of each other. Its size prevents the attack of a small, but compact corps, from being otherwise than partially received; and as an equal front of an irregular body can never stand such a shock, the part menaced must give way. The body is thus broken, and each part acts on the principle of avoiding an exposure to the sole and concentrated brunt of the action, while the part immediately attacked flies: did the remainder fall on the rear of its pursuers, the chase must be immediately abandoned. This, however, would imply a degree of combination, the absence of which is supposed; and the facility with which disciplined squadrons divide, reassemble, charge, and halt by a single trumpet sound, keeps each part of the enemy in that constant alarm of being separately attacked, which reduces all its efforts to the object of self-preservation. It was therefore no want of individual courage which produced the misbehaviour of the enemy, either on this occasion, or on that of Captain Fitzgerald's charge at Nagpore, but the apprehension, however paradoxical it may appear, of being obliged to contend against odds. Our cavalry are too few in number to authorize the experiment of loose skirmishing: if that were tried, it would soon be found that those horse, so despicable in a body, would be most formidable in detail. The best arm against the enemy's skirmishers are the horse artillery, which will always oblige them to withdraw. If to these be attached a party of either horse or light infantry, or both, as an active reserve, the cavalry may attack, and pursue, with little risk. These reflections give occasion to mention the subject of horse artillery, and its application in Indian warfare; in fact their greatest impression is made by demonstration: but as long as that impression is great, it matters little how it is effected. In absence of numerous cavalry, they perform, in reserve, a most important part to

that arm. As above mentioned, they will be thrown forward with proper support to great advantage, for the acquisition or temporary maintenance of a point, during other formations : their use will be truly understood, in a general action, by having a battery of them in reserve, to be produced where not expected, on the critical occasion of any special effort. All these services have a character of vivacity, and not of perseverance, for which horse artillery are little calculated, being more exposed to injury than the unassuming foot artillery, whose solid worth is proved by their ability to make a deep and lasting impression. The horse artillery partake of the showy nature of the cavalry : their whole system of manœuvre and instruction, appointment and dress, is calculated, by rapidity and noise, to compensate for the want of precision and weight."

49. Here it is affirmed, that our cavalry are too few in numbers to authorize the experiment of loose skirmishing ; and it is admitted that the same Indian horse that are collectively despicable, would be formidable in detail. This opinion, from an officer of Colonel Blacker's experience, and high official situation, merits the utmost attention, more particularly as this officer belongs to the mounted branch of the Indian army. It seems to me, however, that to open horse artillery guns on isolated skirmishers, would be a total misapplication of this arm of the service*. This practice was resorted to by the officers in command of cavalry galloper guns, during Lord Lake's war, but tended only to the useless expenditure of ammunition, and to encourage a too great reliance on their guns in the minds of the troopers. The 8th Dragoons declined receiving galloper guns ; and this corps, at Afsulghur, evinced that proper confidence in their swords, which always characterized the Royal Irish. The subject of horse artillery seems surely misunderstood, when it is gravely asserted, that its greatest impression is made by demonstration, and that their characteristic is merely *vivacity, rapidity, and noise*, which, in Colonel Blacker's opinion, is calculated to compensate for want of precision and weight !!

* Warnery, alluding to a similar practice in the Austrian service, observes : " Too much honour is always paid to the Cossacks and Hussars, by saluting them with cannon, as soon as they appear at a distance, and in small numbers. We beg for the future such compliments may be waved.

50. The idea of keeping a horse artillery battery in reserve, in Indian warfare, seems singular ; for this is the arm to which an Indian enemy has nothing to oppose, and, if properly applied, it will generally altogether prevent those critical moments, for which Colonel Blacker contemplates its being reserved. At Ashtec. the horse artillery were directed not to fire, and from being reserved, were not brought into action. Unfortunately for this arm of the service, it is but seldom directed by the discretion of its own officers ; but its movements are crippled, and its effect lost, by the injudicious interference of others. Horse artillery guns are thus rendered obstacles to their own army, and an artillery officer has not only the mortification to witness this, but is liable to be blamed for the blunders which must necessarily arise therefrom. An officer commanding a force, who leaves something to the discretion of the artillery officer, will in general receive better support from that arm, than he who gives positive orders, &c. To consult a subordinate officer on the best mode of ensuring the most prompt and efficient aid from this particular branch of the service, will never derogate from the military character of any officer, however high his reputation.

51. A most unaccountable error prevails, in supposing that horse artillery must exclusively act with the mounted branch of the army ; for their services are available wherever required, either with infantry or cavalry.

52. The only difference between horse and foot artillery is, that the former can move with greater celerity : both are equally efficient, provided their calibres are the same ; but this simple fact, known to every artilleryman, seems to have escaped the observation of the military writer whose work I have quoted.

53. The remarks I have quoted from Colonel Blacker's work, certainly appear paradoxical. No doubt our tactics, founded as they are on scientific principles, will always give us an advantage, if judiciously applied ; but Indian horse are seldom congregated in such very large irregular bodies as Colonel Blacker supposes.

54. The general usage is, for large bodies to be subdivided into circular assemblages, commonly termed in India, goles, under their respective leaders. These goles of horse seldom

exceed 1000, and this body "*en masse*" does not expose a front equal to two squadrons (granting the front to be equal to the diameter of such gole.) Moreover, as a circle contains within its area a greater space than any other figure of equal perimiter, no regular formation admits of so condensed a mass as a gole. Instead, therefore, of the attack of a regular body being received, as assumed by Colonel Blacker, if the regular body charges with a front equal to the diameter of the gole, its centre will come in contact with the enemy before its flanks.

55. In an abstract question of this kind, no supposition can be fairly admitted; and I therefore protest against Colonel Blacker's mode of begging the question, by *supposing* the absence of all combination. The illustration chosen of Captain Fitzgerald's charge, is rather inapplicable; for, instead of charging in a compact body, Captain Fitzgerald's three troops appear to have extended their front; and the uncontradicted statement of Justitia in the Calcutta Journal, sufficiently explains, in this instance, the cause of the absence of all combination, on the part of the enemy. That the immense body of Nagpore horse assembled on that occasion, should have apprehended being obliged to contend against odds, seems utterly incomprehensible; for the small number of Captain Fitzgerald's party must have been visible to every eye. If I may be permitted to hazard an opinion, I should be disposed to attribute our success on such occasions, certainly more to moral than to physical causes.

56. I willingly concede, that our habits of discipline, and regular system of tactics, tend to prevent confusion, and have their due share in the success of our military operations; but that mere tactics rendered Fitzgerald's charge so decisive, I can never admit. It was rather the spirit that animated his little band, excited by a just confidence in their enterprizing leader and his gallant comrades, that determined all to an act of devotion, with the desperate hope, on the part of each individual, of turning the fortune of the day. It was the presence of mind that led to the enemy's guns being turned against themselves, and not any advantage of tactics, that occasioned Fitzgerald's success; and without any exception, it appears to me the most daring and noble exploit ever performed by our

Indian regular cavalry. Had the result been disastrous, this could not have lessened the merit of those engaged. The crisis had arrived; and it was no longer tactics, but valour, guarded by proper discretion, that was to decide the contest: and in this instance, fortune deservedly favoured the brave.

57. Major Doveton is justly praised by Colonel Blacker for his gallantry and judgment; but his affair bears no analogy to the Nagpore charge. The object of the enemy's horse on the former occasion, seems to have been to harass the reserve, and to drive off the camp cattle. Major Doveton had a squadron of European Dragoons, and two of native cavalry under his command, and knew, that in the event of a repulse, the whole line would have supported them. The conduct of this same horse at Ashtee, in attacking three times the number of cavalry that Major Doveton commanded, supported by artillery, proves, that when it was their object to fight, they could make an impression as well as a demonstration. Gokla's fall was certainly decisive; but the opinion of the enemy, as stated in the intercepted letters, seems to merit attention: for it is singular to note what opposite inferences are drawn, according as prejudice blinds the judgment*.

58. When bodies of horse are in mass, guns may be opened with effect; but our cavalry skirmishers and light infantry ought surely to be fully competent to drive back those of the enemy, without the aid of guns.

59. From Colonel Blacker's statement it appears, that loose skirmishing renders the native irregular horse formidable, while our cavalry troopers cannot individually oppose them. Our system is thus declared, by an Indian cavalry officer, inapplicable to individual warfare; and in this opinion I certainly concur, although I differ as to the cause.

60. I am not prepared to fall in with the common place opinion regarding the irregular horse: when acting collectively, it is admitted that their misbehaviour does not origi-

* Extract of an intercepted letter, page 460, Blacker's Mharrattah War.—“Gokla, with a part of the troops, went out to meet the enemy; and if the others of the army had charged with equal spirit, such defeat would never have occurred.” Colonel Blacker pledges himself for the authenticity of this document, page 23; vide note.

nate in want of individual courage; and I shall attempt to shew, that when led by enterprizing chiefs, they have frequently evinced some degree of tactic, as well as of bravery.

61. Irregular horse, as I have already observed, are generally formed in goles, or compact circular bodies, under their different leaders: their rallying point is the Nishan Burdar (standard-bearer) and the Naggarchie (kettle-drummer,) and the Eckas are the skirmishers. Here then is a system, for the Naggarchie beats* the charge, or rally, in like manner as our trumpet directs these movements. When awaiting an attack, a gole of horse forms compactly "*en masse*," with their best armed and bravest men (Eckas) next to their opponents, and the men in mass closely wedged together form a mutual support to each other, and expose the smallest practicable front. An enemy in line venturing to charge them will, therefore, if they prove resolute, seldom make an impression.

62. The skill with which they use the matchlock, enables them to pour in a fire, when the attacking squadron approaches within 30 paces, which will generally create much confusion, and will almost always stagger men who have no rear support.

63. It was in this manner that Diaram and his cavalry, at Hatrass, received the charge of one of the European dragoon piquets, and, favoured by night, and his local knowledge of the ground, escaped with his followers from the army which surrounded him: and in a similar mode the Rajpoots of Harroutee saved their chief from being taken, when pressed by our cavalry.

64. In both of these affairs, our officers' helmets were found useful: and in the latter, the troopers' caps were cut fairly in two by the enemy's Sowars, while the life of the commanding officer was saved by his helmet†.

* In our service, the irregular horse have trumpets, as well as kettle drums.

† What I have stated rests on the authority of the officers commanding on both occasions alluded to, who detailed the particulars to me. The 8th Dragoons had exchanged their helmets for shakoes at this time; but some of the officers still wore the old helmet. Lieutenant Van Corlandt's helmet was cut through the vizor by the stroke of a tulwar, he himself being slightly wounded in the forehead. At Kalungba,

65. The charge of Gokla at Ashtee, and Moro Dixit's gallant conduct at Kirkee, I have already alluded to : the former was well timed, our troops being unprepared for the charge ; and the fire of the matchlocks, when advancing at a gallop, shewed a steady system of attack, and the generalship and tactic were certainly in favour of Gokla in that affair.

66. I shall quote one more instance of the conduct of the irregular horse, from Colonel Blacker's work, as tending strongly to controvert his arguments. It records the fact of irregular horse advancing to cover the retreat of infantry, and forcing their way through a British line, page 68 :—

“ The eagerness of this movement was the cause of a partial disorder, which was not neglected by the enemy's horse : of these, a body of three hundred, consisting of the most resolute, surrounding the Zereeput flag, advanced to cover the retreat of the infantry. They forced their way through the British line ; but a reinforcement of two companies of Europeans, timely supplied by Colonel Burr's orders, having enabled the 1st Battalion of the 7th Regiment to rally expeditiously, the attack was soon repulsed, and its repetition abandoned.”

67. Surely such conduct as this might, and ought to have prevented the undeserved, because too general censure of the conduct of the enemy's irregular horse, as having been contemptible in *every* instance during the late war : and I believe every unprejudiced mind will, in the foregoing instances, discern a system of tactic, altogether at variance with the confusion of a disorganized mass of individual combatants*.

68. The Bengal cavalry originally consisted of two Ras-sallabs : these, in 1787, were formed into the 1st and 2d Regiments. The 3d Regiment was raised in 1796, the 4th in 1797, the 5th and 6th in 1800, the 7th and 8th in 1805. It was only, however, in 1797 that the cavalry was declared a distinct

where the gallant Gillespie fell, several of the dragoons' lives were saved by their helmets ; as a matchlock ball, when impinging obliquely, glanced off the hard smooth surface of the helmet, while it penetrated a felt shako.

* The irregular horse have no knowledge whatever of the European mode of charging : theirs is a mere scattered advance, the best horse and bravest man taking the lead : against our regular infantry, when prepared to receive them, they could not therefore ever make an impression.

corps, the officers belonging to it before that period having risen in the general list of the army.

69. Until 1797, there appears to have been no uniform system of field movement in the Bengal cavalry; for a General Order of that date directs his Majesty's Regulations to be printed, and a copy sent to each corps for their guidance.

70. In 1810, the carbines with cavalry corps were reduced to 15 per troop, and an additional pistol was furnished to each trooper.

71. In 1801, two six-pounders were allotted to each European and native mounted corps*; and a proportion of the men were trained to act as artillerymen. The 8th Dragoons alone declined receiving guns; and it is perhaps to be regretted that other corps† did not follow the example of that

* G. O. C. C. 2d July 1801, and 11th April 1803.—“Horses for the gun and tumbrils attached to cavalry regiments, to be supplied from those belonging to regiments respectively. The advantage to be derived from the guns depending in a great measure on the goodness of the horses allotted to their use, the Commander in Chief directs that commanding officers do select from the whole of the regiments under their respective commands, the horses best adapted to the use of the guns, and to change them whenever they shall see occasion to do so.” From the foregoing order, it would appear that the best and most tractable horses were intended to be allotted for the galloper guns; and officers commanding cavalry corps seem to have acted up to the spirit of the order, as the old cavalry horses, with some of the native troops of horse artillery, are certainly very superior.

† The 8th Dragoons declined gallopers, because they had seen many opportunities lost of attacking the enemy in a critical situation, in consequence of its being thought necessary, first, to try the operation of a few rounds of grape, and while that dose was preparing, the enemy got beyond reach. The absence of gallopers obliged the dragoons to depend upon their own legitimate arm, and left them free scope for action, particularly in skirmishing in front of a line or on the flanks of a column, either in division or open files, which is commonly the practice; and in these situations, guns could scarcely ever attend them.—*Remarks by a Field Officer of his Majesty's Dragoons.*

Our cavalry in this country should certainly have carbines; they are the only things that will keep the enemy's skirmishers at a distance. In Lord Lake's first campaign, there were only 10 or 12 carbines per troop; and our videttes and skirmishers, both on the line of march and round the camp, were constantly annoyed by the enemy; for they despised our pistols, and out of reach of them, brought our men down deli-

fine regiment; for when an officer commanding a cavalry corps had the power of keeping the enemy's skirmishers at a distance, and creating confusion in their files of horse, by the fire of his galloper guns, without exposing his men or horse, he always eagerly availed himself of those means, and thereby excited in the minds of his corps a prejudicial partiality for guns, calculated to prevent the men depending exclusively on their proper weapons.

72. In the first Mharratta war, the cavalry skirmishers were consequently seldom called out on this side of India; and this part of our system was soon too generally considered of very minor import.

73. In 1817, the cavalry gallopers were formed into native troops of horse artillery; and I believe this measure was deprecated, even at that late period, by some cavalry officers, who still considered guns as the most efficient arm against an enemy's skirmishers. Be this as it may, it is apparent, that the only mode left to compensate for their present want of guns, is to arm and equip our native troopers, so as to render them not only collectively, but individually superior to our enemy.

74. The interior economy of the Bengal cavalry has been proved to be excellent: the men are brave, and high minded, and only require to be placed on an equality when individually engaged with their opponents, a disqualification which they still continue to labour under.

75. Too rigid a notion is generally entertained in favour of our own system*, being the best in every point of view;

berately with their long matchlocks. His Lordship therefore took the first opportunity of sending for the remainder of our carbines; for it would have been too harassing to employ night and day the few men who previously had been equipped with them, in a duty of such consequence to the safety and repose of the army, surrounded by the numerous cavalry of the enemy, as well on the march as in camp.—*Remarks by a Field Officer of his Majesty's Dragoons.*

* This prejudice in favour of our own system, has been productive of serious detriment to the public service: it occasioned the introduction of geldings in the cavalry, and the practice of castrating the stud horses, which is now abolished; but not before this ill judged measure had deprived the stud of many fine stallions,—a loss which, from the extension of the Zemindary system, can only be replaced by the purchase of others. The docking and squaring of the tails of the cavalry

and in military matters, it is frequently considered absurd to take hints from a people whom we have subdued: this is a doctrine no doubt true in the abstract, but, like many other truths, too often misapplied.

76. The alarming fact of two squadrons of one of our most distinguished regular cavalry corps, being dismissed the service for want of energy in the field, is alone sufficient to call for a very strict scrutiny into this branch of the army; and the individual who attempts to point out what appears to be defects in the present equipment of the regular trooper, may possibly escape the imputation of presumption.

77. The regular trooper should, we think, have some better protection from his adversary's tulwar than the present light cap and jacket afford to him; and the native equipment, both for man and horse, with certain modifications, might perhaps be adopted throughout our regular cavalry, with great advantage*.

78. I am aware that the introduction of the Indian equipment might be objected to, on the plea of its tending to substitute a desultory mode of individual combat, for that system of mechanical movement, which constitutes the basis of all

horses, (a usage purely British,) although at variance with General Orders, still prevails in some corps of this army. The natives consider it a most cruel, and wanton barbarity; and justly say, that it deprives the animal of the means of driving off the flies and other numerous insects, which abound in this country. The 24th Dragoons did not dock their horses, and the 11th retain the useful appendage nature has given their horses. The universal custom of every nation is not to be impugned by English prejudices, which in India are altogether inapplicable.—G. O. C. C. 8th March, 1803. His Excellency, in order to preserve uniformity of appearance in the native cavalry, directs that the tails of the horses shall be of that length as to reach to two inches above the hock, and that they be always kept of this length.

* General Warnery, in his satirical style, observes, page 13 of his *Thoughts and Anecdotes*: "When a recruit enters into a corps of Turks or Tartars, he ought to be circumcised, or if into one of Calmoucks, have his nose somewhat flattened, to give him some appearance of what he represents; but I doubt if any reason can be given for putting people in masquerade, by giving them a foreign dress, more costly than their own: light horses with their eastern saddles, and arms as in the east, would they not be as advantageous?"

our military tactic. Without presuming, however, to give any conclusive opinion on this point, I may here remark, that a mechanical system of tactics seems much more applicable to infantry than to cavalry, in as much as an infantry battalion is formidable only when united, or acting as a machine, whereas in the *meleé* which follows a cavalry charge, all depends on the individual combatant.

79. The square formation, the platoon fire, the closeness of files to give efficiency to the bayonet, are in the infantry, all incompatible with individual combat ; besides, infantry are as often required to defend as to attack ; while cavalry without carbines can defend themselves, only by attacking their enemy. No doubt the more compact the charge, the greater its effect : but this compact order is surely attainable with the native as well as with the European equipment.

80. There certainly is another, and perhaps a more solid objection attending the introduction of the native equipment, viz. that in the event of a trooper's deserting, his services would be at once available to the enemy. Our present system certainly renders it necessary that a deserter should be furnished with native arms and equipment by our enemies ; for not one of the native powers have adopted our cavalry system, although they have long since copied that of our infantry and artillery.

81. The trooper certainly at present acquires habits and prejudices in our regular service, which unquestionably render him more dependant on the state than the irregular horseman ; and I readily admit, that this is an objection which I am not prepared fully to rebut ; but the chief ties on a Company's soldier is the regular pay, and strict justice which notices the claim of even the lowest camp follower : this, and the invalid pension, with regular leave to visit his family, and an indulgent consideration for his habits and customs, will always attach the native to our cause, no matter in what manner organized or equipped. Granting, however, that these and other arguments may be adduced against innovation, I yet venture to state my reasons for pressing a modification of our present cavalry equipments, upon the consideration of those with whom such matters rest.

82. The cavalry horses of India are far more managable in the native standing martingale, and the native bridle, than with English accoutrements. The severe country bit, and the standing martingale, gives the rider a power over the horse's head he can never acquire with those of English fashion now in use. Whoever doubts this, has only to place two posts thirty yards asunder, and witness the decided celerity, in the wheelings of an irregular horseman, when compared to those of a regular trooper, choosing the men and horses at random.

83. It has been objected to the use of the standing martingale, that it checks the speed of the horse, and thereby impedes the velocity of the charge. No doubt the speed of a horse is in a slight degree checked by his head being controlled; but the assumed *sequitur* does not follow, for to cause the greatest shock, the charge must be united, that is, the speed must be regulated, not by the individual exertion of each horse, as in a race, but by the average rate of going, otherwise the swift horses would soon take the lead, and destroy the impetus of the united movement, which alone renders the charge formidable.

84. The standing martingale curbs the impetuous spirit of the country horse, and preventing his bolting, enables the rider to regulate the pace of the animal by the average swiftness of the squadron. I do not mean, however, to rest my opinion on theoretical grounds only; the standing martingale is no innovation in the Bengal army: its general adoption in the 5th Regiment of regular cavalry, and in other mounted corps, is a conclusive proof that many of our cavalry officers consider it useful.

85. The cheap adoption of the native saddle for the expensive English one, would at once supersede all riding-school discipline; for with a horse caparisoned after the native mode, a trooper is at once fixed in his place, without any necessity for a six months drill, under a riding-master, a part of our discipline the most irksome to the natives.

86. The pernicious custom of striking the recruits in the riding-school, and at drill, with the rattan cane, so directly at variance with General Orders, tends effectually to lower

the pride, and degrade the character of the native soldier ; and the constant lunges which seem so necessary to prevent our troopers from losing their English seats, destroy more horses than the longest campaigns.

87. Our English mode of riding, I mean the military seat, is condemned by the natives of India, as a constrained posture for a horseman, which precludes his having the free use of his arms. A native horseman will guide his horse by his voice, and with the pressure of his legs, so as to make him perform his exercise, with the bridle laid on his neck. This enables an irregular horseman to use his matchlock with a deadly aim, and this renders him formidable as an individual skirmisher.

88. The hussar saddle of His Majesty's regiments, in some points approximates to the native saddle of India. Some modification of the Hindoostanee saddle would, however, be perhaps found more appropriate for our regular cavalry ; but as it has never yet been adopted in any of our regular corps, I am disposed to submit my opinion with hesitation, more particularly as its introduction would certainly create a radical change in our present system of riding. The Bombay cavalry, at the recommendation of Colonels Lincoln, Stanhope, and Dalbiac of His Majesty's service, have, I understand, either obtained saddles of the description I refer to, or are likely soon to get them, the Kumdah woollen manufacture of the Punjab being used in lieu of the blanket.

89. It is, I believe, now generally admitted, that the native irregular horseman is more than a match at the sword for a regular trooper. The cause is, I think, obvious : the trooper, when isolated, depends solely on his pistol ; for otherwise he concedes the choice of weapons to his antagonist, who in most cases will have an easy victory. The native irregular, mounted on his own horse, of whose powers and tricks he is completely master, is not only protected by his quilted jacket*, and turban

* Even Col. Fitzclarence observes as follows :—"The irregular cavalry throughout India are mostly dressed in quilted cotton jackets, though the best of their habiliments are not, as I supposed, *stuffed* with cotton, but a number of cotton clothes quilted together. This serves as defensive armour ; and when their heads are swathed round, and under the

of many folds, but his shield forms a complete defence to his back, from the neck to his loins, while our regular trooper must trust to his sword alone for defence, as well as for attack.

90. The most superficial observer who has witnessed the confidence and dexterity of our irregular horse, cannot doubt, but that in a *melee* (which must always occur after a charge,) if pistols are not used, the native gale of horse, if firm and resolute, must ultimately destroy their opponents.

91. The regular trooper's cap and jacket, though light and becoming, are no defence to him; and consequently, instead of seeking to cut down his opponent, he looks around, naturally enough, to guard himself, and thus loses that active courage which ought to constitute the character of a mounted soldier*.

92. The natives are prejudiced in favour of their own swords, and this alone must necessarily lead them to lose confidence, when required to use the English blade in action. In Hindoostan, there is no pattern sword: the Musselmen, and different Hindoo military classes, use their own discretion in selecting their blades; and many take pride in retaining the

chin, with linen to the thickness of several folds, it is almost hopeless, with the sword, to make an impression upon them." *Fitzclarence's Travels*, page 143.—In Lord Lake's campaigns, those troopers of our regular cavalry who preferred the Hindoostanee tulwars, were allowed to have them. At the storm of Bowaney in Hurriana, in 1809, the garrison marched out into the plain, and were there cut up by the 5th Regiment of regular cavalry, and a party of Skinner's horse. On that occasion, many of the regular troopers were armed with the Hindoostanee tulwar. Before the charge, orders were given for the irregular horse to blow out their matches; and when the *melee* took place, as the irregulars had no pistols, the tulwar alone was used by them. To direct irregular horse to blow out their matches, has the same effect as to order regular cavalry to take out their pistol flints, and ought never to be resorted to.

* "Although," says Guibert, "all kinds of musquet-proof arms are very properly laid aside, yet there is no necessity to disallow of some precautions being used to defend the cavalry against the *arme blanche*, provided they are neither heavy nor very embarrassing. It is necessary to cover the head with a casque sabre-proof, and the shoulders with a three chained mail fastened to a leather epaulet. Let the soldier's head (says he) be protected, and he will fancy that his whole body is safe."—*General Essay on Tactics*, pp.182,183, and 266, vol. i.

swords of their forefathers, which are handed down as heir looms from father to son.

93. The Rajpoots prize the Sirohee blade, the Mharrattah those from Guzerat, which resemble the German (termed by them *Allemagne*,) and certainly among the best: the Patans the Saife, a heavy straight sword; the Moguls what is called the Persian, or Damascus blade, imitations of which are manufactured at Delhie and Agra.

94. It is with these weapons that so many of our troopers and sepoys arm themselves, when on service; and the best swordsmen still continue to fence in their Akaras*, using the sword and shield, never equipping themselves with their regimental swords, except when on their own parades. Most of our troopers, however, justly prefer the pistol; for experience has taught them, that a pistol shot is not to be warded off by chain armour or quilted jackets: and I have heard a distinguished cavalry officer assert, that it might even be advisable, in some cases, to direct the front rank of a leading squadron in a charge to draw their pistols.

95. The following observations of Thiebault, in his *Manuel General du Service des Etats Majors*, seem so just, that I cannot forbear transcribing them:—“ Il existe un fait que selon moi, est propre a faire bien evaluer, ce que l'on peut attendre en general, d'un corps de cavalerie, et combien de bons ollicers de cavalerie, sont precieux. Sur cent hommes pris au hazard, il ny'en a, en general, que vingt cinq en trente, qui maitres de leurs chevaux, maniant bien leurs armes, electrisés par les circonstances, ayant pris leur parti sur les chances de la guerre, et animés de l'ardeur des braves, chargent *franchement*, et ne s'amusent pas a parer, mais ne sont occupés, qu' à frapper. Ces hommes sont ceux qui decident les affaires. Apres eux on trouve, à peu près dans un nombre egal une seconde classe d'hommes, qui lorsqu'ils le peuvent, sans risque, don-

* Places of exercise for fencing, wrestling, &c. which cannot be too much encouraged among our native corps. At these places, wrestling, fencing, and feats of personal strength and activity, are practised and taught; and nothing gives our soldiery more pleasure than to see their officers looking on upon such occasions, which also often serve to exhibit the character of the soldier, or at least the general opinion entertained of individuals by their comrades.

nent de meme quelques coups de sabre, mais qui avant tout, cherchent à parer ceux qui les menacent. Enfin le restant, embarrassé d' eux et de leurs chevaux, et toujours disposés à la retraite, ne songent qu' à son salut, et à peine en état de parer quelques coups, et ne quittent que le moment d' échapper, à tous les risques, que leurs foiblesses exagèrent."

96. Perhaps in no instance was more 'cool determined confidence evinced than by the French Cuirassiers at Waterloo, their courage being stimulated by their *defensive armour*, which enabled them to fight in comparative security, and to charge "*franchement*," exposed to the concentrated fire of our numerous squares, which would soon have exterminated the French *light cavalry**.

97. Defensive armour, by giving confidence, renders even the timid brave ; and the third class alluded to by Thiebault are thereby reduced to only a few, while the second class are not required too often to parry, and are consequently brought more on a level with the first.

98. Whoever has witnessed the review of a Bengal regular cavalry corps, must have remarked the general inefficiency of its skirmishers, who seldom can manage the carbine, their attention being chiefly required for the management of their horse. In this, our irregular horse, with worse tempered horses, far excel them ; and the precision with which

* There are some fanciful writers, who consider that *English* soldiers would degrade themselves by the adoption of defensive armour. But these altogether forget, that the English warriors at Cressy and Agincourt were in full suits of mail, and that even the great Marlborough wore the cuirass.

Perhaps many a brave man's life would have been saved at Waterloo, if our Life Guards had been equipped with this excellent modification of an old military costume, now in use with the heavy cavalry of every European army. At the battle of Marengo, according to Berthier's report, General Kellerman had only 800 cavalry, when he made a desperate and successful charge on an Austrian close column of 6000 men ; and Bessieres, with 360 Grenadiers and Chasseurs of the Imperial French Guard, completed the route of the Austrian cavalry by a similar movement. At Austerlitz, when the Imperial Guard of Russia had broke through the French line, the grenadiers of the French Guard again decided the victory. This last charge was ordered by Buonaparte, Count Rapp, his aid-de-camp, leading the grenadiers.

a native horseman fires when at a gallop, is now very well known.

99. A good marksman with a carbine, is very rare in our regular cavalry; and as a regular trooper is obliged to mount any horse indiscriminately, it is altogether impossible he can ever acquire the same skill as the irregular horseman, who seldom bestrides any horse but his own, and who plumes himself on his superior management of it.

100. In our native cavalry, there are at present only 15 carbines per troop: consequently, if a corps is dismounted, there are only 120 efficient soldiers; and on any emergency, if a cavalry corps has to pass a defile, or has to act by itself, a body of resolute matchlockmen may impede its progress; whereas an irregular corps, when dismounted, is on a perfect equality with their enemy, each man being armed with a matchlock, sword, and shield, except those who carry lances, who have no fire arms*.

101. To show what cavalry can effect by a timely use of the carbine, I quote the following anecdote:—“A la bataille de Friedland, M. le Général Baron de la Ferrière, Commandant la Cavalerie, du 9^e. corps, arriva sur le terrain, après avoir fait au grand trot, une marche de quatre lieues. Une masse de cavalerie fraîche et en nombre bein superieure à la sienne, lui faisoit face, et s'ébranla pour le charger, en maniant, ou il se mit en bataille dans cet état de choses, ne pouvant éviter

* In the affair at Goruckpore, the contingent horse of Scindiah are said to have been taught to dismount, and assail infantry sword in hand, page 348, Blacker's Mharratta. From this observation, the uninformed might suppose that irregular horse had never practised this manœuvre before, and had only acquired this knowledge under our tuition. This practice has, however, been always common in Asia, and prevailed in the time of Timur, of Nadir, and of Ahmed Shaw. The Dorance invaded India chiefly with horse, and the Persian dismounted and massacred the inhabitants of Delhi. Scindiah's Bhargeer horse were, on several occasions, dismounted, and employed to storm forts with Perron's infantry brigades. Major Skinner's men at Sumbull were all dismounted. At Kulunga they acted on foot; and in 1813, I witnessed this very manœuvre, executed by Colonel Skinner's order, when one of his Russallahs was suddenly fired upon by a band of Mewatties concealed in ravines and broken ground: about 50 men instantly dismounted, sword in hand, and in a few minutes cleared the ravines of the enemy.

de choc, il forma sa ligne derrière un foible obstacle, fit prendre la carabine, et ayant le sabre au poignée, attendit l'ennemi de pied ferme, et le reçut par un feu, qui le decida, à se retirer, sans achever sa charge. C'est à ce General, l'un des officiers de cavalerie le plus distingué, sous les rapports de la guerre, et de la science, que je dois les principaux details, relatifs a l'emploi que la cavalerie doit faire de ses armes." —Page 410, *Manuel General du Service, des Etats Majors.*

102. Having pointed out what I consider the defects of our present regular cavalry equipment, I am of opinion, that if it were possible to combine the advantages of the European tactic and discipline with the native equipment, a great desideratum would be attained.

103. Perhaps native lancers might be organized: the lance, or spear, is a favourite weapon in India; at all events, an experiment might be made on the relative merits of the modified Polish and Indian systems.

104. The natives of Hindoostan, more particularly the Mharrattas and Rajpoots of Central India, use the Hindoostanee Bala (the spear) with great dexterity. With them, it is, I may say, an indigenous weapon. The Hindoostanee bala differs altogether from the Polish lance, being much longer, and having a sharp point at the reverse end, which may be used when the lancer is closely engaged. The exercise is altogether different. The Hindoostanee bala, being balanced in the hand, is, by a simple turn of the wrist, brought at once to the point for a charge, over the horse's croup.

105. In Hindostan, a good lancer is considered as more than a match for a swordsman; but much depends upon the horse, and only the most docile are selected for this kind of weapon.

106. However opinions may vary as to the introduction of the native equipment, I am satisfied no cavalry officer will object to his men being better protected than they now are. A good strong helmet with cheek plates, appears the only proper head-dress for mounted soldiery; and the sooner the bamboo cap, and ornamental shakoe is abolished, the better*.

* M. C. 8th April, 1793.—“Resolved, that from the stoppages on account of off-reckonings, each native commissioned and non-commis-

110. In addition to the helmet, I would propose, 1st. That the Europe swords be abolished, with their clattering steel scabbards, and that the troopers should be indulged with their own swords and shields. 2dly. That the carbine be brought into general use. And, 3dly. That the trooper's person be protected by strong shoulder plates, and such other defensive equipments as our best cavalry officers may consider suited to the nature of the climate, and to the service required of cavalry in this country*.

111. Let this be done, and our regular cavalry need not fear to encounter even the disciplined squadrons of an European enemy. The utmost attention should also be given to the perfection of our skirmishers; and then it will be found, that but few of the enemy's horse will venture within the range of our carbines.

112. In offering the foregoing observations, I am aware that I hazard the mere opinion of an individual, on questions of great military importance; but it arises from a strong conviction, that if the regular cavalry is not now the most efficient arm of the service, it is the fault of its present defective personal equipment. And if what I have stated calls forth discussion, or attracts attention to this point, I shall be amply repaid for having presumed to trouble you.

AN OFFICER

Of Horse Artillery.

sioned officer, trumpeter, and trooper, shall be supplied with a head-dress, *which is not to be a helmet.*" It appears from this, that the Bengal Government in 1793, did not consider it expedient to attempt to introduce the helmet; but times are much altered since that period, and I can aver, from personal knowledge, that a strong prejudice exists in the minds of some of the native soldiery in favour of this head-dress. The subjoined is an extract from a letter of a field officer of dragoons, whose course of service has given him ample opportunity for judging of the comparative utility of the helmet and shakoe.

"In regard to my opinion of preference between the helmet and shakoe, I am decidedly in favour of the helmet with high crest; it protects the back of the head, which the shakoe does not, and most certainly saved my life at Kallungah, it having withstood shot, as well as stones."

* Marshal Saxe wore a plastron or cuirass of silk stuff, quilted and doubled many times, in the folds of which cotton was bedded.—*Esp. des loix de la Tactique.*

ARTICLE III.

REMARKS ON MILITARY LAW.

To the Editor of the Indian Military Repository.

SIR,

Military law, as applicable to the troops serving in the East Indies, has long remained much neglected. Little of any consequence had appeared on this subject, from the Indian press, when the first edition of Captain Hough's Case-Book was published in 1821.

This was followed, in 1821, by a very able little work, from the pen of Lient. Colonel Vans Kennedy, the Judge Advocate General at Bombay, in which, besides much original matter, there is an excellent chapter on Evidence, founded upon the standard works of our civil law, and some very just remarks upon various errors into which Captain Hough had fallen.

I should be glad, Mr. Editor, to think, that we might yet be indebted to the Judge Advocate General of Bombay for a second edition of his work, amended, so as to form a commentary on the Mutiny Act for the Company's Forces (the 11th of George the 4th,) on which we have recently been favoured with Annotations by Lieutenant MacNaghten of this establishment.

From the perusal of this last work, I have risen with an impression highly favourable to the ability, candour, and public spirit of the Author; and with a general concurrence in many of the sentiments his Pamphlet contains: but in it, as well as in the other works I have mentioned, there appear to me to be some material and dangerous errors, of a nature calculated to mislead many of your numerous readers.

The interests of the army are so deeply involved in every question of military law, that the increased discussion of such matters by means of the Indian press, must be hailed with pleasure by all; and though I cannot hope, that anonymous remarks will, of themselves, have much weight, I gladly avail myself of your excellent Repository, to communicate some opinions differing from those of the authors above mentioned,

in order that your readers may form their own judgment, and discuss more fully the several points I have ventured to touch upon.

It is well known, Sir, that the military law of England had its origin in the year 1689, or in the first year of the reign of William and Mary after the revolution, when an act for the punishment of mutiny and desertion, was for the first time passed by the British Parliament.

With the exception of about three years only, (from April 1698 to February 1701,) this act has since been annually renewed, with such alterations and amendments as seemed called for; but it invariably, in its preamble states, that by the common law, no man can be subjected to any punishment except by "his peers, and according to the known and established law of this realm*." And it then goes on to enact the legal exceptions from this general rule, which are to be allowed.

It is this annual act; with his Majesty's Articles of War founded thereon, which constitutes the military law for his *Majesty's* forces; and these, so far as regards that portion of the King's troops serving under the three East India Presidencies of Calcutta, Madras, and Bombay, will now be found, in all material new modifications, to coincide with the existing act, and Articles of War, of the present King, for the *Company's* forces.

The first act passed by Parliament, applicable to any portion of the *Company's* forces, was that of the 27th of George the 2d, in the year 1753; and Articles of War founded thereon, were published by his Majesty in the following year, 1754.

Before this act was passed, the Company, by the charter of King William, had been authorized to raise forces; and this act of George the 2nd was applicable to their European forces alone, or to such as they had originally raised within the British isles; the levy of which last was further subsequently regulated by the 39th of George the 3d, which expressly enacted, that until embarkation, the said forces shall be liable to the Annual Mutiny Act, and afterwards, to this act of George the 2d.

* "Nisi per legale judicium parium suorum, vel per legem terræ."
—Vide Magna Charta, cap. 29, whence this preamble is taken.

“Prior to the year 1757, the military establishment in Bengal consisted of only one company of artillery (*Europeans*,) and four or five companies of *European* infantry, with only a few hundred natives, armed after the manner of the country.” (See Captain William’s Work on the Bengal Sepoys*.)

Now in 1753, or at the time the act of George the 2d was passed, the British legislature did not possess any legislative power over the *natives* in the Company’s service; for “the few hundred natives armed after the manner of the country,” at that time in their service, were exclusively the subjects of foreign Indian princes, and the Company had not then obtained by cession or conquest the sovereignty or independent government of any Indian territory†.

So late as 1783, we accordingly find his Majesty George the 3d, acting upon this construction of the act; for when, as Elector of Hanover, he agreed that one of his German regiments should “remain in the service of the East India Company for the term of seven years,” it was particularly provided, that “the two battalions were to be governed (not by the act of George the 2d, but) by their own martial‡ law;” which could not have been lawful, had the 27th of George the 2d been applicable to all troops in the Company’s service. That act was therefore equally inapplicable to the subjects of Delhi and Arcot, as it was to those of the Hanoverian Elector.

It may indeed be argued, that though the Sepoys of the Company, at that time, were subjects of the native princes, they had not been *enlisted* by them, but by the Company; whilst the Germans, after being *enlisted* by their own sovereign, were only temporarily transferred to the Company’s service. I admit the distinction; but pending that ser-

* The Sepoys on the coast were then more numerous, but equally with those in Bengal the subjects of foreign independent powers, over whom the British Parliament possessed no legislative authority.

† The sovereignty of the small island of Bombay remained with the crown of England, only the rights, profits, territories, appurtenances, &c. &c. having been granted to the Company by Charles the 2d.

‡ Vide Grace’s Code.

vice, I consider both to have stood in the same relation to the Company.

My argument, however, as to the inapplicability of the act of George the 2d to the Company's *native* troops, does not stand on this ground alone. I beg therefore to remark, that the words "officers and soldiers," when used alone in that act, never were applied by Parliament to *sepoys* or *native* troops, (the native subadars and jemadars of whom had then no commissions, and were, at that time, nominated merely by warrants from the Colonels commanding brigades;) for in all subsequent acts of Parliament, the distinction is maintained by the express nomination of them, not as "officers and soldiers" only, but "as native troops," or "officers and soldiers being * natives of the East Indies."

Even upon the cession of the Dewanny in Bengal (1766,) and of the Carnatic on the coast, and after the acquisition of the Bombay provinces, when Parliament authorized the establishment of his Majesty's courts at the Presidencies of the East India company, then possessing ceded or conquered territories, the British legislature still carefully refrained from legislating directly for any *natives* of those Indies, except only for those within the limits fixed for the King's supreme courts of judicature.

Nay, Sir, by the several acts passed in the 37th, 39th, and 40th years of the reign of George the 3d, the British Parliament specially recognized, in the several Governments of India, the power of legislating for all their native subjects, including of course their native troops; and not only will articles of war, and other military regulations, be found to have been published by the several Governments, for their native armies, but in the civil code formed by the local governments under these very acts of Parliament, will be found a formal regulation, empowering these governments, in particular cases, to declare even the native *civil* inhabitants liable to martial law.

I am aware that martial law, which has been said to be "in truth and reality no law, but something indulged rather than allowed by law," is not to be confounded with military law, as legally administered by courts martial under

* Vide 53d of George the 3d, and 4th of George the 4th.

acts of Parliament ; but if the local governments be authorized to extend the former, in certain cases, even over the civil inhabitants of their dominions, who are usually subject only to the civil courts which these local governments have established, how much more are they by law entitled to follow the example of the British legislature, by establishing military law, and regular courts martial for the punishment of their native officers and soldiers ?

But to rest on the most solid grounds, my argument that the act of George the 2d was always inapplicable to the *native* troops, and that the general legislative authority vested by Parliament in the local governments over natives, always extended to the establishment of military law by courts martial over their native troops, I beg to observe, that, by Regulation II. 1809, passed in Bengal under the 37th of George 3d, before mentioned, the Bengal Government in the preamble declared, that, “ By the annual acts of Parliament for the government of his Majesty’s forces, provision is made for empowering officers commanding in chief, not only to appoint courts martial, but to authorize officers under their command, with certain restrictions, to convene such courts ; and a similar provision for the delegation of this authority is contained in the act passed in the 27th year of George the 2d, for the prevention of mutiny and desertion in the Company’s forces ; *but this latter act applies only to European officers and soldiers in the Company’s service*, and no regular provision has hitherto been made for enabling the Commander in Chief to delegate the power of appointing *native* general courts martial, when detachments from the Bengal army may be sent on foreign service or to stations beyond sea :” then follows an enactment providing for this case.

Now, Sir, on the extension of the Company’s charter by the subsequent act of the 53d of the late king, passed on the 21st July 1813, which is the act next to that of George the 2d, treating on martial law for the Company’s forces, under the three Presidencies*, the British Parliament inserted

* The 1st of George the 3d does not apply to the three Presidencies, but to Bencoolen and Prince of Wales’ Island ; and the 21st of that king,

in it a section numbered 97, confirming not only the above quoted enactment, but “all laws, regulations, and articles of war,” and even the “established usages,” “although the same may not have originated in any written law or regulation” of the several Governments in India respecting their *native* troops.

The articles of war here alluded to, Sir, are not the articles published by his Majesty George the 2d in 1754, founded on the mutiny act of 1753, both of which, as before noticed, were applicable to the Company's troops, raised in the British isles alone, but, in Bengal, a selection from these which the Bengal Government, by their minutes in council of the 7th May 1781, and 30th May 1796, had made, and adopted as *their own*, and published and caused constantly to be read to their native army in the native languages.

But in the act just quoted, (the 53d of George the 3d,) the British Parliament did not stop here; they observed, in section 96, that “doubts having been entertained whether the several governments of the said Company have sufficient power to make laws and articles of war for their *native* troops,” or to try them by courts martial, (which last doubt, let me observe, never could have been entertained, had the act of George the 2d and the king's articles of war founded thereon been really applicable to them,) “Be it therefore declared,” not, Sir, that this act of George the 2d is so applicable; but, on the contrary, that the local governments “have*,” and during their charter shall possess, “full power and authority to make all such laws and regulations, and articles of war, as they may think fit, for the order and discipline of all officers and soldiers *natives of the East Indies*, and for the administration of justice by courts martial, to be holden on such *native* officers and soldiers” as they may “make other laws

section 32, as well as the whole of the 39th of his reign, relate to the mode in which the Company's forces are to be levied in the British isles. These last support my argument by shewing, that the words “soldiers in the East Indies,” refer to “men being his Majesty's subjects,” raised in the British isles.

* This is not an enactment merely granting this power, but a declaratory one, stating, that it has before been vested, as in fact it was, by previous acts, or the 37th of George the 3d before quoted.

and regulations for the government of the natives subject to the said Presidencies respectively."

Wherefore, Sir, when Parliament passed the new act of the present king, (upon which alone Lieutenant Mac-Naghten's Annotations are given,) and which repealed the original act of George the 2nd, the British legislature, still consistently adhering to their former and invariable rule of leaving the local governments to legislate for their *native* troops, expressly declared, in that very act, that its provisions did not apply to the *native* troops, to whom (*as the Company had then acquired territory and subjects*) the act might otherwise have been deemed applicable, under the general terms of "officers in pay," or "soldiers enlisted" by them.

This exception of the native troops, is contained in section 62, declaring, that "*nothing in this act contained shall in any manner impeach or affect any matters enacted or declared respecting officers or soldiers being natives of India or other places within the limits of the said Company's charter, contained in the said act passed in the 53d year of his late Majesty; but that all such matters shall be of the same force, in respect to such native officers and soldiers, as if this act had not been made.*"

It is on the foregoing enactments and facts that I maintain, the act of the 27th of George the 2d, and *that* king's articles of war founded thereon, (which, let me observe, remained unaltered until those founded on the 4th act of his present Majesty were passed,) never of themselves applied to the Company's *native* troops; first, because the native troops at the time the said act and articles were passed (in 1753—4) were liege subjects of foreign Indian independent princes, as little subject as the troops of the Hanoverian Electorate to the Parliament of England; and, secondly, supposing it argued, that all troops directly enlisted by the Company, to whatever prince they might once owe allegiance, were by this act, from the mere fact of their enlistment by the Company, included in its provisions, I maintain that their *native* troops were not so included; because the 21st of George the 3d (section 23) shews the term "soldiers in the East Indies" to allude only to troops enlisted in the British isles, and because Parliament confirmed this view of the case by the 37th, 39th,

and 40th of that king, and particularly by the act subsequently passed in the 53d of his reign, in which they declared this, not only by confirming the local regulations and articles of war (which in Bengal happened to be mere selections adopted by the local authorities from those of George the 2d,) but by making the unwritten usages of that, and of the other local governments, the military law of their *native* army, until altered by a printed enactment of those governments respectively, in whom they declare unlimited power of legislation for the natives and native troops to be vested, and from whom they only require a certain form of publishing such enactments, viz. that laid down in the 37th of George the 3d.

Nay, Sir, I further maintain, that this is the reason why the 53d of George the 3d has not been repealed, as Lieutenant MacNaghten (in page 79 of his work) suggests; and why, on the contrary, it has been confirmed by sections 62 and 63 of the new act of the present king, which expressly declare, that, whether within or without the Company's dominions, the *native* troops shall be excepted from all operation of the act, and that the sole military law applicable to them is the established usages, the articles of war, and local rules of the *Indian Governments* in force when the 53d act of George the 3d was passed, and further, such subsequent regulations as may have been, or may be framed, under section 96 of that act, and of the former act of the 37th of George the 3d, cap. 27.

It necessarily follows that the act of the 4th of the present king, and his articles of war for the Company's forces founded thereon, on which alone Lieutenant MacNaghten has written, are applicable solely to that portion of the Company's troops which are not natives of the countries included in their charter.

If the foregoing be a correct view of the military law, applicable to the several bodies of troops serving in India, the Annual Mutiny Act, and his Majesty's Articles of War founded thereon, are alone applicable to the king's forces. Nothing but the 4th act of George the 4th, and his Majesty's articles of war founded thereon, can be applied to the Europeans, either Britons or foreigners, or others, *not natives of the countries within their charter*, in the Company's forces; while no-

thing but the act of the 53d of George the 3d, and the established local usages, local articles of war, and local regulations of the Company's governments, can apply to their *native* troops.

Having given you the premises on which I ground my judgment, I proceed to point out some of the errors in the works before mentioned, which have attracted my notice.

The second and improved edition of Captain Hough's book, lately published in England, appears still open to many of the objections pointed out by Colonel Vans Kennedy against the first edition; and particularly attending to embarrass, rather than to facilitate the practice of military law, by being a series of charges, sentences, and opinions, without that statement of attendant circumstances, which forms the very essence of a case-book. I observe, that in page 694 of it, Captain Hough states, that the *native* troops, where there are no courts of criminal judicature, may be tried by courts martial for "*any capital crime*." Nay, he most strangely supports this maxim by the "5th act, 15 section, 27th George II. cap 9."

Now Captain Hough ought to have known, that the act of George the 2nd, and the articles of war founded on it which he quotes, never applied to the *native* troops, as I have shewn above; or supposing, as he erroneously did, that this act and the articles of war founded on it, did at any time extend to the *native* troops, he ought to have known that both had been rescinded and repealed by that very act of George the fourth, on which his second book is founded; and which, in cases out of the Company's dominions, (where alone courts of judicature are wanting,) declares, in section 63, that as respects *native* troops, reference must be had to the local usages, and articles of war, of the local governments.

Again, if Capt. Hough had referred to the existing native articles of war for the Bengal army, noticed in General Orders of the 2d June, and 21st December 1796, he would have found that the article he quotes remains unadopted by the Bengal Government, whose general code of law, (vide Carrol's Code, chapter 45, Article 41, Regulation V. 1809,) on the contrary, provides, that native subjects of the Company, who may commit heinous offences out of their territory, shall

be tried by such court as may be specially named by the Government, to whom a reference is to be made.

If, previously to the 53d of George the 3d, it had become an "established usage" to try native troops by a court martial for capital crimes, when committed where no courts of judicature existed, a continuance of this practice might be justified under that act; but certainly never by the repealed articles, and act of George the 2d, quoted by Captain Hough.

At a sister Presidency, where the Judge Advocate General, now a general officer, has held that office for many years, and stands pre-eminent as a civil lawyer, a contrary* usage has, under his sanction, prevailed, as most consistent with general law; and it is the local usage, confirmed by the 53d of George the 3d, which, in this instance, constitutes the law, until changed by the local government.

Lieutenant MacNaghten has written his Annotations evidently with reference to the late act of the present king, and to the Articles of War founded thereon, and to them only; for had he extended his enquiries to previous acts, he is too intelligent a writer, to have fallen into some of the errors which I proceed to notice.

It is a want of due reference to the 53d of George the 3d, being the sole foundation of military law for our *native* troops, that induces him (in page 79) to suggest its repeal, and its inclusion in the new act, which only regards those who are *not* natives, and with which it has no connexion.

It is the want of due examination of the 62d and 63d sections of the 4th of George the 4th, which especially except the native troops altogether from the operation of that act, and particularly refer to the other of the late king, in which, as I have before observed, the authority of the local governments to legislate for their native troops, as for their other native subjects, is so fully acknowledged, that leads him (in page 41) to

* At Jaulna, in the Nizam's dominions, where one Madras sepoy murdered another, a court martial was assembled, but afterwards dissolved by Sir Thomas Hislop, under an opinion from Major General Leith, that they could not try a civil offence. The accused was afterwards brought within the Company's territories, tried, and finally hanged by the court of circuit, for the Company's most adjacent provinces.

state: "I cannot discover in the Mutiny Act upon which I am writing, any exception of the native troops."

It is the same want of examination which leads him (in page 46) erroneously to assume, that to the act on which his Annotations are given, and to that "act alone," must we look for the authority on which we dispense military law; and induces him erroneously to assert, that we "cannot punish a native with death, save by virtue of the power derivable from the Mutiny Act, and by that power alone can a native be tried, and executed, for murder, rape, theft, or any crime capital by the laws of England and provide against by the second section of the present act;" and "for these and other reasons," he is led erroneously to infer, that "by the 4th of George the 4th, cap. 81, the native part of the army is contemplated, in an equal degree with the European."

The explanations I have before given shew, I hope satisfactorily, that other acts of Parliament than the late Mutiny Act of George the 4th, authorize military law to be administered in India, and prove, I trust indisputably, that the second section of that act, construed by the 62d and 63d, excludes our *native* troops from its operation, and still more other natives, who, under the 37th of George the 3d, beyond the limits of the Supreme Court, are daily executed for murder and other capital crimes, by an authority, and under a law very different from that of England, or of this last Mutiny Act.

My construction of the law, while it exposes some of Lieutenant MacNaghten's errors, likewise confirms other arguments used by him. It shews that a *Court of Requests held under the act of George the Fourth*, for the trial of actions of debt, against officers, non-commissioned officers, or soldiers, sutlers, and followers or servants, resident within the limits of a military cantonment, *the same not being natives of the countries comprised within the limits of the Company's charter*, can never legally be composed of *native* officers; though it at the same time shews, that the local government is quite competent to establish either European, native, or mixed bazar or other military courts, for the settlement of debts due by officers, non-commissioned officers, soldiers, sutlers, followers, and servants of their army, being na-

tives of the countries comprised within the Company's charter, as well as for their native subjects.

At the same time, it will be seen, that the first of his Majesty's Articles of War regarding divine service, as well as that relative to the oath to be taken upon the Holy Evangelists by members of courts, never having been rendered applicable to the native troops, by the local governments, are not open to some of the objections which Lieutenant MacNaghten mentions; and that the intention of the General Order by Government of the 11th March 1825, which he disputes, is fully authorized, though the words "not being natives of India," would perhaps have been preferable to "British subjects;" for foreigners not "British subjects, or natives of India," are certainly liable to the provision contained in section 57 of this new act.

Lieut. MacNaghten allows, that solitary confinement is preferable to corporal punishment, as a means to reform a criminal; but argues, that the latter is superior to the former as a means to deter others from crime. It is indeed too true, that when a man is sentenced to imprisonment, his comrades lose sight of him, and that no impression of terror is left on their minds. There is much validity in Lieutenant MacNaghten's general argument on this point; yet when referring to solitary confinement, he asks, Where is there any one to exhort the criminal to repentance, and to encourage that train of thinking without which there can be no reform? I may remind him, that there is a military chaplain at most of our European stations, whose duty this especially is.

I cannot quit Lieutenant MacNaghten's work without pointing out another error into which he appears to have fallen.

After noticing the distinction maintained by Lord Hastings between the punishment of "dismissal" and of "cashiering," he appropriates several pages of his pamphlet to the question, "Whether an officer under suspension can benefit by any vacancy which may occur among his seniors in the regiment, and he having been at its commencement (suppose) *third* Lieutenant.

This question, as regards the rise from an inferior to a superior grade, or from that of Lieutenant, for instance, to that

of Captain, I agree with the author of the Annotations must be answered by all in the negative; because the suspended individual has no rank pending the operation of his suspension, although his name is as a matter of course continued on the list of his corps; and if, during such suspension, his name is raised to the top of that list, by the promotion of the two seniors in his grade, the vacancy of a company pending his suspension must, by the established right of seniority, devolve not upon him, but on the Lieutenant next under him in the list; for the suspended officer having no rank whatever at the period of the supposed vacancy, and the one under him being, then, in *effective* rank, the senior Lieutenant of the corps has a right, as such, to be promoted to fill the vacated company.

But this cannot hold good, as argued by Lieutenant MacNaghten, respecting the same grade. If I understand him right, Lieutenant MacNaghten insists, that if a Lieutenant standing third on the list of the Lieutenants in his corps, be suspended, and the two Lieutenants previously above him, be duly promoted to companies during his suspension, the suspended individual must not, at the end of his suspension, return to the rank which his no longer dormant commission certainly assigns to him, viz. first in the Lieutenants of his corps, but must take a rank in the regiment below that of the Lieutenant who was *fifth* in the list of Lieutenants, at the commencement of his suspension.

This, surely, is bad argument; for no Lieutenant ranks as the first, second, third, fourth, or fifth, in his corps: he has no fixed place in it, which he fills, and to which alone he must return, on the expiration of his suspension. All officers of the same grade rank according to the dates of their respective commissions; and supposing the third Lieutenant held a commission of 1812, and the two under him were Lieutenants of 1813 and 1814, while his two seniors were of 1810 and 1811, it is evident, that if these two seniors (of 1810 and 1811) were to die or be promoted, during the suspension of the third Lieutenant (of 1812,) he would return to his corps, on the expiration of his suspension, as the senior Lieutenant; because being a Lieutenant of 1812, he is senior to the (originally fourth and fifth) Lieutenants of 1813 and 1814.

The reason of this is obvious: the rank which was given solely by his commission was suspended, not altered; he lost the higher grade, because when that vacancy occurred, the rank given by his commission was taken away by his sentence of suspension, and he held no rank whatever. But his commission, on the expiration of his suspension, revived in all its original force, and he must return with the rank it gives to him (1812) at the head of his own grade, above, and not below, the Lieutenants of 1813 and 1814. It would indeed require a separate sentence of degradation, not of mere suspension, to change the original date and tenor of his commission.

In page 65 of his pamphlet, Lieutenant MacNaghten confesses himself unable to discover any reason why the local governments should be empowered to suspend the proceedings of any court martial; and he observes, "it would undoubtedly be a novelty to see the Commander in Chief directing a court martial to try an offender, and the Governor General interfering to prevent it."

But if Lieutenant MacNaghten had adverted to the circumstances which took place at the Madras Presidency in 1809, between the Governor of Fort St. George (Sir George Barlow) and the Commander in Chief (Lieut. General McDouall,) he would have discovered just cause for this enactment. Indeed, had a provision similar to this been in force in 1809, it is questionable whether the unfortunate events that then so much agitated the Madras army would ever have occurred.

I shall conclude my observation on Lieutenant MacNaghten's work by remarking, that, towards its close, the author has treated with much sound judgment the distinction to be made by the members of courts martial between their function as jurors, in pronouncing a verdict of guilty, or not guilty; and their duties as judges, in passing sentence, when the former may be the verdict given; and that he has discussed, with success, the principles upon which they should proceed in these two characters respectively.

But he appears to me to have failed in supporting the conclusion at which he has arrived, respecting the weight to be given to the vote of the President at a court martial.

For the sake of perspicuity, it seems requisite to distinguish between a *casting* vote, and a *double* vote. The speaker of the

House of Commons possesses what is generally in common parlance termed "a casting vote." He superintends and controls the proceedings of that house, but he possesses no vote whatever in their decisions, except when the votes of the several members are equally divided; he then possesses the power of giving what is termed his "casting vote;" and the former speaker, Mr. Abbott, exercised this power on several memorable occasions.

The President of a court martial, on the contrary, is bound, like the other members, by his oath, to vote on *all* occasions. But Lieutenant MacNaghten claims for him a *double* vote, in all cases in which he, together with the members who coincide with him, form a number equal to those who differ from them in opinion.

This extraordinary power of vesting a double vote in the President is no doubt supported by Tytler, who says, that "if the court should be divided in opinion, the President, who in all cases is entitled* to vote, must, in that case, be allowed a double voice."

It is also supported by Colonel Kennedy, Judge Advocate General at Bombay, an authority perhaps deserving of still higher consideration; and by Sir E. Paget, the late Commander in Chief in India. It is certainly a common, but not the invariable, practice in India, and also of his Majesty's service, except at the Horse Guards. M'Arthur accordingly allows, that it is "the usage of army courts martial;" but, says he, "the opinion of Dr. Paul on a case of this nature submitted to him, and which happened at a naval court martial in 1746, goes decidedly to the legality of the question remaining undecided;" and this opinion he gives at length.

In support of the opposite doctrine, Sir Charles Morgan, the Judge Advocate General of England, after observing, that he knows not upon what authority Tytler's *dictum* rests, adds: "I have ever understood the law to be otherwise; and I have to add, that the practice of the Horse Guards does not countenance that position."

* He should have said, "obliged;" for all members of a court martial are, by their oath, bound to vote.

The Marquess of Hastings, admitted to be one of the first military lawyers living, certainly published to the Indian army a similar judgment in one case; though the author of the Annotations states (upon what authority I am not aware) that he decided another differently; and justly relying much upon Colonel Kennedy's authority, Lieutenant MacNaghten advocates his view of the matter, as "most conducive to the ends of justice."

I concur in the hope Lieutenant MacNaghten expresses, that the legislature will interfere to settle a point so very highly important; but I incline to think, that they may take a view of it, very different from that which has been supported by him and Colonel Kennedy.

The usual, but ever disputed, and certainly variable and unestablished practice, inclines to the side which the author of the Annotations has adopted. It is the prevalent custom in India, and particularly in the king's service, in cases of equality, to give the President a double vote; and this partial custom in the king's service seems to have been the foundation of Tytler's opinion, as it certainly is of M'Arthur's admission of the usage; while the publications of both by the compilers of Henly's and Carroll's codes, have strengthened the practice in Bengal.

But I beg to impress upon your readers, that it has been the custom in the king's service, only at a distance from the Horse Guards, and away from the Judge Advocate General; in other words, in situations where deference to military rank and authority, rather than to sound law, was most likely to prevail. At the Horse Guards, the direct contrary has been the established practice; and so early as 1746, we find Dr. Paul, in Doctor's Commons, denouncing the double vote, on the ground, that "by the laws of this realm, where there are a number of judges appointed to adjudge a point of law or fact, the same must be settled and decreed by a majority in the King's Bench, Common Pleas, and Court of Exchequer. There are in each four judges; the chief is vested with superior dignity, not much unlike a president; but in decisions, if two puisne judges differ from the chief, and a puisne judge agrees with him, no judgment in such case can be given." He adds, that in the Court of Delegates, a similar rule prevails;

and in confirmation of his authority, I may quote Captain Hough, page 958 of his second edition, that, "in questions before the twelve judges, if six are *pro*, and six are *con*, no decision is given."

If analogy of law, therefore, be sought in the practice of the twelve judges collectively, or divided in their respective courts, and presiding over the civil law of England, it will be found in favour of the practice adopted at the Horse Guards, where courts martial are in general composed of the most experienced officers, and are aided by those most learned in the law, being generally superintended by the Judge Advocate General of England himself.

To this it has been objected by Colonel Kennedy, that the members of a court martial are not judges only, but jurors also.

I reply, then let the analogy of law, in a point of decidedly disputed practice, be sought for in the sound and constitutional proceedings of the juries in our courts of justice. We shall there, both in the grand and the petty jury, find a foreman or president, who presides over all the members, who is the organ of the whole body, and who gives their verdict, but who possesses only a single, never a *double* vote. Nay, a single dissentient voice, in the petty jury, (who decide on the guilt or innocence of the prisoner,) may outweigh even all the other jurors, along with their foreman, or at least preclude a verdict, unanimity being required from them.

The grand jury, however, still more resembles a court martial; for there unanimity is not required; it can adjourn; its foreman's presence is indispensable; it is sworn to secrecy as to the votes of its members; it is generally of an odd number, never more than 23, or less than 12, including the foreman; and it is often, by the illness of some of its members, reduced to an even number.

What is the rule, I ask, of English law here, where the jury do not even decide, like a court martial, on the final innocence or guilt of the accused, but merely on the minor question, whether he shall be put upon his trial? Not only is the

* The Sheriff returns 24 jurors, "as many of them as appear upon this pannel, are sworn of the grand jury, to the amount of 12 at least, and not more than 23, *that 12 may be a majority.*" Vide Jacob's Law Dictionary. "Indictment."

foreman here also denied a double vote, but an absolute majority is required, not merely of the reduced number attending, say of 22 or 18, but of the highest possible original number who can be sworn, namely of 23, twelve jurors (the majority of this highest number) must find a bill, or it is "no bill."

If 22 only attend, and the numbers are 11 on each side, though the foreman may have voted for the bill, he must endorse it to be "no bill;" if 18 only attend, and the foreman and 10 others vote for the bill, yet the remaining 7, being the *minority present*, carry the question against the majority of 11, and in favour of the accused; because in both of these cases, the number who voted for the bill do not constitute the required *legal* majority (12) of the original highest possible number sworn (23.)

Never then let us again, Mr. Editor, hear Britons asserting, that a proceeding contrary to what is thus sanctioned by the most sacred part of our revered law, is the "most conducive to the ends of justice." It is the glory, Sir, of the law of England, as contra-distinguished from that of every other nation, that its principles are invariably favourable to the accused. When the question is merely, whether he shall be tried, it demands an absolute majority of the highest possible number of which the jury can consist, and thus occasionally even authorizes a minority of those in attendance, to prevent the trial of an accused person, rather than permit the slightest departure from this ancient, wholesome, and constitutional rule.

Again, when the accused comes to be tried, it enables a single dissentient voice to prevent a verdict of guilty being recorded against him. Nay, even when tried and convicted by the jury, an equality of voices among his judges, as to his being punishable under the law, may altogether suspend his sentence; and where the law gives in any instance, as to the speaker of the House of Commons, what is called a *casting* vote, it imposes on him silence in all cases, where an absolute majority exists, and enables him to exercise that important and singular privilege, only when the house is equally divided.

In no case* does the constitution, or law of England, sanction the obvious absurdity of one man's judgment being

* It is worth remark, that in the Court of Directors of the East India Company, composed of an *equal* number, and even in the Court of Pro-

more infallible than that of another, by conferring upon him a double vote. It is true that, in every case, humanity would incline most men, in matters of doubt, to favour a prisoner; but English law has not intrusted to so fallible a creature as man so dangerous a power: it declares, that the very want of an absolute majority, the equal balance of the scales of justice, shall be tantamount to an acquittal; and if it be jealous of vesting so extensive a power in its constitutional juries, how doubly jealous will it not become, when it is publicly claimed for those, on whom, as an exception to general law, it has found it expedient, for the discipline of its armies, to confer not only the power of jurors, but the great authority of judges also.

If such be the distinguishing character of the law of England in favour of its private citizens, let it not too hastily be advanced, that a similar principle does not extend to its gallant soldiery; and above all, let us not hear such an argument from British officers, who should be the first to advocate the rights of the army, and least of all let us hear it from those, whose present or past official characters may tend to clothe their opinions with some degree of weight.

prietors, all cases of an equality of voices were formerly determined under the authority of King William's charter, not by a *double vote* vested in the Chairman, but by lot. So unjustly, however, was this found to operate, particularly on the cases of some of the officers of the Madras army, suspended in 1808—9, that, by Section 77 of the 53d of George the 3d, it is provided, that no question shall be carried in either court, except by a *majority*, and that an *equality shall be deemed a rejection of the question*, except in cases of election to offices, which are decided as before by lot. I advocate a similar doctrine; and no officer can tell how soon, or how deeply, the maintenance of a contrary principle may affect his interest, and perhaps his life.

In Bengal, the Judges of the Supreme Court were at first, as in England, four. They have since been reduced to three, and this is the number at the other Presidencies; but all acts of Parliament are totally silent as to any one of them having a *double vote*. The letters patent of the king, anticipating perhaps inconvenience to the public, from a want of all decision where the court may be equally divided in opinion, give a *double vote* to the Chief Justice, or in his absence to the senior Puisne Judge present; but except where delay would operate as a total denial of justice, we trust the bench will ever seek the judgment of a third judge, as the proceeding most constitutional, reasonable, and just, and therefore most satisfactory.

In the true spirit of our civil constitution, Sir, the British legislature, as far as the nature of a court martial admits, has extended to the army this merciful consideration for their ancient privileges as Britons ; and so far from conferring on any member of a court martial a *double* vote, has both in the Annual Mutiny Act for the King's forces, and in the Company's act of the 4th of George the 4th, expressly provided, in Sections XX. and XIX. respectively, that within the dominions of either the King or the Company, "all general courts martial held under the authority of the act, shall consist of *thirteen* or *nine* commissioned officers, *as the case may require* ;" and out of those dominions, of "not less than *seven*," except in particular places, where the number may be not less than *five*.

The legislature here clearly contemplated, in all cases, that general courts martial shall consist of an *unequal* number ; but out of the King's or Company's dominions, it necessarily leaves the number undefined, fixing the minimum only. Within those limits, on the contrary, it fixes them absolutely, or precisely at either "*thirteen* or *nine*," "*as the case may require*."

I am aware that, in subsequent parts of these acts, the words "*not less than thirteen* or *nine*" are used, with reference to trials even within these same dominions ; and that these latter terms only are those adopted in the King's Articles of War, founded upon these two acts respectively ; but the Articles of his Majesty are to be construed by the acts of Parliament on which they are founded, not the acts by His Articles ; and one part of these acts must be construed by the others, so that the whole may stand. The meaning of these acts, therefore, clearly is, that general courts martial, *within* the King's or Company's dominions, must consist of *thirteen* or *nine*, "*as the case may require*," and of no other numbers.

For the particular cases thus generally alluded to, special provisions are subsequently made in the same acts ; as, for instance, that the number shall be "*not less than 13*," in the case of any officer, or on any capital charge, or in cases involving transportation, and "*not less than 9*," in other cases ; but this is not at all at variance with the previous enactments in these acts ; for 13 or 9 are respectively "*not less*"

than themselves ; and out of the dominions in question, the number may be either more or less.

Now, Sir, I maintain that the object of the legislature in this clearly positive enactment, fixing a *specified odd* number for general courts martial within the dominions in question, was to ensure there an absolute majority in all cases, and thus to secure to the prisoner his constitutional rights. If by any accident, such as death or illness, an *equality* of voices should prevail, the mutiny acts not having provided for the contingency, the common law, from which they form the exceptions, must be reverted to ; and a prisoner, under it, is undoubtedly, in that event, entitled to his acquittal. Nay, Sir, I feel inclined even further to insist, that within these dominions, the majority requisite for a prisoner's conviction must be that of the *thirteen* or *nine* respectively, specified in the act as essential to his trial, and not a majority of such members as are *present* only.

This last construction of the Mutiny Acts may be novel to some of your readers, but I entertain no doubt of its being the correct one ; for, when *thirteen* or *nine* members are by statute declared essential, to try a prisoner, he certainly stands acquitted in law, unless *seven* in the former case, or *five* in the latter, find him guilty. And if the original 13 should be reduced by death or illness, &c. to 11, of whom 6 vote the prisoner guilty, and 5 acquit him, he will notwithstanding the vote of the 6, be in law entitled to a verdict of acquittal, as free from all guilt whatever, not because the minority present (5) have acquitted him, but because those who condemned him (6) do not constitute the majority of the number (13,) which the law has absolutely fixed, as that of the jury impanelled, or judges to be sworn, to try him. Indeed a contrary doctrine, in, I allow, the extreme case of the absence of all the other members (by death or other casualty,) might leave a man's fate to the decision of a single survivor.

It is in strict conformity with this merciful doctrine, both of the Mutiny Acts and of the common law*, that within the

* If I am right in my belief, that within the dominions in question, the law absolutely requires thirteen or nine, and that either more or less is equally illegal, and Colonel Kennedy is correct in his statement (page

King's or Company's dominions, even when the absolute majority of the full number sworn may convict the prisoner, the acts still further require, that out of those present, 9, being the *major* two thirds, (not of those voting or attending merely, but of the full original number of 13, fixed in capital cases as that of the court,) shall be unanimous, in order to pass the awful sentence of death; and it is only *out* of those dominions, or where courts martial may consist of *more* than 13 officers, that it allows two thirds of the members merely present to decide in such cases.

In short, Sir, the view I have taken of this important question, appears to me not only that which is supported by the Mutiny Acts, whether for the Company's or King's troops, but that which is founded in the ancient law of the land, of the benefit of which no Briton can be deprived, except by positive statute. The opinion before quoted of an eminent lawyer, so far back as 1746, shews that at that early date he supported part of my argument, by the practice of the twelve judges of England, founded on "the laws of the realm." That the whole of it is equally justified by the practice of our juries (also founded on our common law) has likewise now been attempted to be shewn.

The custom of war, or general usage of courts martial in this case, has been variable and inconsistent; and if weight be due to either side, it certainly is to that of the Horse Guards, where courts martial are composed of the most experienced officers, aided by the highest legal advice. It is this practice, not his mere *dictum* only, which Sir Charles Morgan offers as the foundation of his opinion; and where two Commanders in Chief of India have differed, as Lord Hastings and Sir Edward Paget have done, much more weight appears due to the mature judgment of the experienced and constitutional senator, than to the decision of the gallant, but in law at least, less experienced soldier. The whole matter, however, has so deep a root in our constitution, and the analogy of the common law is so fully supported by the enactments contained in the military statutes, that I apprehend any deviation from the

210,) "that if a court martial be reduced below the legal number of members, the functions of the remaining members cease," it follows, that there never can exist, *legally*, an equality of voices.

rule, in so clear a case, would subject the “members of a court martial to punishment.”

I arrive, therefore, at these conclusions : 1st, That, as jurors, on the question of guilty, or not guilty, it requires a majority of the members of a general court martial to pronounce the accused guilty ; that within the King's or Company's dominions, if the court be legally constituted of *thirteen* or *nine*, no equality of voices can occur ; and that, without these dominions, where it may occur, an equality of voices is in law an acquittal : and, 2dly, That, as judges, on the question of punishment, an equality of voices in a court martial, where half vote for no punishment, ought to suspend all sentence ; and where half vote for one, and half for another punishment, the decision or sentence should be in favour of the minor of the two.*

The opinions of some of the highest legal authorities at the three Presidencies regarding the act of the 4th of George 4th, are not unknown to me ; and it appears universally considered to have been drawn up, as mentioned by Lieutenant MacNaghten, “with a degree of looseness which is unspeakably reprehensible.” That its language did not excite attention is to me no matter of surprize ; but I should have thought, that its substance at least, might have roused some of the constitutional members of one of the two houses of Parliament from the apathy so common in England to the discussion of Indian affairs.

That the numerous wanton crimes committed in India by our European soldiery, demanded a new legislative enactment, cannot be denied ; but I do think, some other local remedy might have been devised, instead of the exclusion of the whole British army in India, King's and Company's, Officers as well as Soldiers, stationed 120 miles distant from the presidencies, from the peculiar birth-right of a Briton, *trial by jury* ; the transferring the administration of the intricate system of English criminal law, both common and statute, from the learned judges of his Majesty's supreme courts of judicature to the members of a court martial, necessarily not at all versed therein ; and not only committing this anomaly of leaving the civil law to be administered by a military tribunal, but making some crimes, as for instance forgery, committed by European offi-

cers or soldiers within 120 miles of each Presidency, liable merely to a sentence of *transportation by the Judges of the Supreme Court*, (and this only under an extension of power granted to them by the 53d of George the 3d,) whilst beyond that boundary, the very same crime, on conviction before a *court martial*, renders the prisoner liable, under Section II. of the 4th of George the 4th, to the awful sentence of *death*. This, Mr. Editor, is legislating not only in loose language, but in a manner as strongly unconstitutional, as it is inconsistent.

I remain,

Sir,

Yours,

Cossypoor,
1st Dec. 1825. }

TRIAL BY JURY.

ARTICLE IV.

ON RESTRICTION IN PROMOTION

TO

THE HIGHER GRADES IN THE HONOURABLE COMPANY'S
ARMIES.

To the Editor of the Military Repository.

SIR,

The object of my present address is, to shew the expediency of some measures being taken, with a view to obtain for the older officers of the Company's armies in India, a more speedy attainment of the higher army grades than they ever can hope for, while their promotion to the rank of Colonel, and upwards, is limited solely to the issue of General Brevets, to the King's army in England.

During the continuance of peace and tranquillity in Europe, the grant of General Brevets by his Majesty to the army of the Crown, must, evidently, be restricted by a variety of considerations, but chiefly by those of a financial nature, and by the great number in the royal army already advanced to the rank of general officers (577,) and the very limited demand for their employment. General Brevets cannot therefore be expected from his Majesty, but at very long intervals, and must then be confined to few officers of the army of the Crown, and always to much fewer of the Honourable Company's service.

But the considerations which must regulate the issue of General Brevets to his Majesty's forces, do not apply to the East India Company's armies, *for the latter form no burthen on the purses of the people of Great Britain.* These armies now very far exceed in numerical force, that of the crown. But it is questionable whether the Court of Directors, who manage the affairs of that Company, the ministry of England, who control them, or his excellent Majesty himself, are aware, that though composed of much more than 200,000 men, only 80 of their officers hold the rank of Generals; and of these, that almost all have retired for life to Europe. There are only,

Mr. Editor, 15 Company's officers in India holding the rank of Generals, of whom one is Governor of Fort St. George, two officiating Commanders in Chief of the Madras and Bombay armies, while five more have already served their tours on the staff: so that out of 80 Generals, only 7 are left eligible for the important commands of the 12 great divisions, forming that portion of the army in India, especially assigned to the command of Company's officers.

The number of officers above the rank of Lieutenant Colonel now in his Majesty's service, amounts to 788; but in the Company's armies, which I have already observed very greatly exceed that of his Majesty in numerical strength, these only amount to 95. More than 200 officers in his Majesty's service now hold the important rank of Colonel, while only 15 officers of the whole of the Company's service possess that grade.

There were, lately, more Colonels actually present in India, with the 22 corps of his Majesty's forces serving in this country, than with all the 200 regular corps of the Company's army of the whole three Presidencies. 51 Majors were also borne on the strength of these 22 corps of his Majesty's service, while there were little more than half that number of Majors, in the whole of the Bombay army, which comprizes a force half as great again, or 32 regular, and 4 extra corps. And there are now only 6 Colonels granted by his Majesty for all the 95 regiments of the Bengal army, while on the strength of only 13 corps of his own service, *employed and serving with the Company's troops in Bengal and Ava*, there were lately 10 Colonels, not less than 4 of whom, then actually in India, had obtained that rank by the special appointment of Aide-de-Camp to the King!

These facts, Mr. Editor, will I think shew, that the honest, but weak endeavours made by the Honourable the Court of Directors, of the year 1806, have not removed "all grounds of future inconvenience;" but, on the contrary, have totally failed to place "*the officers of both services on an equal footing in respect to their promotion to the rank of Colonel,*" upon the attainment of which highly important grade, the Honourable Court are aware, the advance of their officers to the rank of General depends.

If such, Sir, has been the result of a trial extending to a period of nearly 20 years, during one half of which, a war of the most serious nature in Europe, caused every nerve of our national strength to be strained, and consequently called forth more extensive and more frequent General Brevets, than had ever before been issued; what, I beg, Sir, to ask, must be expected by the Company's officers prospectively, under the tranquil aspect of affairs now established in that distant quarter of the globe.

Active as the operations of General Brevets have been during the greater portion of the last 20 years, they have left our army in Bengal, consisting of more than 120,000 men, with only six Colonels; yet there are more, Sir, than 30 Lieutenant Colonels, on the effective list of the Bengal army alone, who have from 42 to 45 long years, been performing active military service to the state, and whose contemporaries in his Majesty's service are either Field Marshals, Generals, or Colonels.

A due consideration for the interests of these Lieutenant Colonels, and of the other officers of our armies throughout India, calls loudly for a repeal of the regulation of 1806, which, I submit, has borne most detrimentally upon them, without advancing in the slightest degree the general interests of his Majesty's service.

All of his Majesty's officers can, and many of them daily do, supersede ours, even in the inferior ranks, by the operation of that irregular and rapid regimental rise, by favour, interest, or purchase, peculiar to the royal service. But they still more effectually step over our heads, in the superior grades, by the operation of partial and special brevets, obtained for particular services, or by nominations to certain staff appointments, the official rank conferred by which is not, *as in our service*, temporary, local, and evanescent, being lost with the office which originally gave it, but remains permanently attached, after loss of office, to the individual who once gains it, and is of universal operation, whether in India or in Europe.

Debarred, by the slow operation of a service of strict seniority rise, from all these great advantages which his Majesty's officers of the line enjoy, in the inferior or regimental grades, our officers find themselves further most seriously superseded, in the superior grades chiefly, in consequence of

having been deprived by the regulations of 1806, of the only redeeming chance which they formerly possessed, of regaining some one or two of the *many* steps they had inevitably lost, by the supercession of his Majesty's officers, before rising to the heads of regiments.

It seems certainly unjust, that these regulations of 1806 should be retained in force. I maintain, Sir, that they have not answered their avowed object, which was, to place "*the officers of both services on an equal footing, in respect to their promotion to the rank of Colonel;*" and I contend, that they are diametrically opposed to this object, while they do not serve to uphold any fair claims of his Majesty's army, their sole tendency being to prevent the possibility of even *one* of our Lieutenant Colonels obtaining the most distant chance of an occasional step over one of his Majesty's service (his senior in all probability only as such.) while by the peculiar constitution of the royal service, King's officers, after daily superseding ours in the lower regimental grades, and gaining the ranks of Major and Lieutenant Colonel, by purchase, partial brevet, or particular appointment, in Europe, with a rapidity unknown in our service, may visit this country, though only for a short time, perfectly secure against any Company's officer (over whose head they may have stepped) ever possibly regaining place above them. Thus, a young King's Lieutenant Colonel supersedes, from the day of his arrival in Calcutta, many of our old officers, who have probably not only served several campaigns in India, before their more successful competitor entered his Majesty's service, but were perhaps enrolled in our army, before he was born.

When the nature and relative wants of the two services are considered, —when the wear and tear of life and property, necessarily attendant on the constant military operations and movements going on in India, are adverted to, —when the relative lengths of service, and chance of further promotion among the Lieutenant Colonels in both services are calculated and compared*, it seems barely equitable, that our officers, who

* In the King's service, there are now more Colonels and Generals than there are Lieutenant Colonels; for to 780 Lieutenant Colonels, there are 788 Colonels and Generals. In the Company's service, on the contrary, there are to 312 Lieutenant Colonels, only 95 Colonels and Generals, or but one of the latter, to about 3½ of the former !!!

have suffered all the vicissitudes of foreign service, for nearly half a century, far from their native homes, in an uncongenial clime, should no longer be (as by the Regulation of 1806 they now are) debarred from succeeding to the rank of Colonel on rising to the command of regiments: justice, Mr. Editor, common, impartial justice, requires that they should, by promotion to the rank of full Colonel, be allowed that single solitary chance, of regaining in some slight degree, the position they must have lost, by the previously suffered supersession of the officers of his Majesty's army at large.

The practice which prevailed previous to 1806, of advancing officers in our service to the rank of Colonel, when they rose to the command of regiments, (for the re-establishment of which I contend,) seems merely to restore (and in a very trivial degree only) that approach to a balance of promotion, without which our officers cannot fail to be invariably, and most seriously superseded, by the officers of the crown; *and even after the balance is thus adjusted*, if the length of service of the Lieutenant Colonels in the one army, be compared with the length of service of the Lieutenant Colonels in the other, the speedy rise of his Majesty's officers will ever greatly outweigh ours. I believe I am correct, and I feel confident I shall give no offence, Mr. Editor, when I state the startling fact, that there are now more than 30 officers, holding only the rank of Lieutenant Colonel in the Bengal army, who are by many years older officers, than either our late, or present Commander in Chief.

In the corps of Royal Artillery and Engineers, in which, as in all of our corps, promotion is obtained solely by a strict seniority rise, not only is there no restriction (such as that of 1806) against the Royal Ordnance Lieutenant Colonels superseding their brethren of the line; but a *Colonel Commandant* (not, Sir, a *Lieutenant Colonel Commandant*) is given to each battalion, in addition (not, Sir, to another Lieutenant Colonel, as with us, but) to *two other full Colonels, besides two Lieutenant Colonels*; and the great proportion of *three* full Colonels is given to the Royal Artillery, Sir, in order in some degree to balance the deplorably slow promotion of the officers of that royal corps, with their comrades in the line.

Thus his Majesty has not only placed no such restriction against the promotion of his own Lieutenant Colonels in

the Royal Regiment of Artillery and Engineers, as his ministry of 1806 enforced against those of the Company's army, but has granted the highly important rank of Colonel, regimentally, (which gives as a matter of course the rank of Colonel in the army,) not to one, but to *three* officers of each battalion of the Royal Ordnance corps, in order to enable the Lieutenant Colonels of that corps to regain, by the step of Colonel, those which they (like the officers of our service) lose in the lower grades. from their strict seniority rise*.

If his Majesty has thus shewn so much consideration towards the only corps rising-solely by seniority in his own service, I have not a doubt, Sir, that on the same just principle, the officers of our Indian armies, already cramped in promotion by an exactly similar system of seniority promotion, might (if not invested with the great advantage of *three* full Colonels to each battalion, which has been given to the Royal Artillery) be at least granted *one* Colonel to each regiment, as before 1806, and as a special boon from the royal favour, be freed from those severe restrictions which do not exist in his Majesty's service, but which for the last 20 years, have stagnated the promotion of the Company's officers, and almost banished the honourable grade of Colonel, not to say General, from our ranks. I say, I have no doubt, Mr. Editor, that on a proper representation, the bar which the private interests of the few Lieutenant Colonels of the crown, serving with the King's corps in India, imposed upon us in 1806, but which the united interests of the whole of the officers in the British army, has to this day, failed to enforce in England, against the Royal Ordnance corps, may, as an act of royal grace and favour, be withdrawn. I do not, Sir, hope that we can ever be favoured so much as the royal service; but while *three* Colonels, *two* Lieutenant Colonels, and *one* Major are allowed to each of his Majesty's battalions of artillery, is it unreasonable in us to ask for only *one* Colonel, *one*

* A French author, speaking of the slow promotion of our Royal Artillery, observes: " L'avancement n'a lieu que par ancienneté, et ne s'obtient qu' avec une *lenteur desespérante*, puisqu'il a fallu en temps de guerre, et á une époque où le personnel a été rendu sept fois, plus nombreux, terme moyen, 17 ans de service, pour parvenir au grade de Capitaine Commandant, et de 23 pour arriver au grade de Major, tandis que d' apres un ordre du roi, il ne faut que 6 ou 7 ans de service, pour obtenir ce dernier grade, dans les autres armées."

Lieutenant Colonel, and *one* Major, instead of being burthened with *two* Lieutenant Colonels and *one* Major, *without any Colonel at all?* for such, Sir, is the proportion of field officers to which the restrictions of 1806 have, with few exceptions, reduced us.

But, Sir, the interests and feelings of our old officers are otherwise most seriously affected and wounded, by the operation of the Court of Directors' order of 1806, which, while it prevents our officers being appointed Colonels on their rise to the command of regiments, and occasions our supercession by his Majesty's officers, precludes our Lieutenant Colonels Commandant from taking precedence even of any Company's civil servant, holding the grade of *Senior Merchant*, or, in other words, who may have been only 12 years in the Company's service; for every such civil servant precedes, in society, by the Court's orders, all military officers below the rank of Colonel; and our *Company's Colonels*, being by the Court's regulations of 1806 shorn of their King's commission of full Colonel, and reduced to the denomination of *Lieutenant Colonels Commandant*, rank only on an equality with all other "*Lieutenant Colonels*," not "*Commandants*," and after 45 years service, find themselves thrust down below men, young enough to be their children.

To this I might add, that the deficiency of general and field officers in our ranks, prevent our officers obtaining an equal chance with those of his Majesty's army, in contending for the honours of the order of the Bath. The kindness of our gracious sovereign in opening that order to our officers will be nugatory, if his ministry of 1826, like that of 1806, maintain a regulation, which almost excludes our officers from those high army grades, to which alone the higher classes of that order are applicable.

Thus far I have confined my observations to the injurious effects which the compact of 1806 has had upon the personal feelings and immediate military prospects and interests of our elder officers. I now beg to advert to the detrimental consequences which a continuance of that regulation must entail upon the interests of the state.

Notwithstanding the very great impetus given to promotion, by the immense encrease of the Company's armies, and

the issue of extensive General Brevets during and subsequent to the late wars in Europe, the stagnation incident to a seniority service has prevented the Company's officers gaining the rank of Lieutenant Colonel Commandant, until after a service in India of from 30 to 45 years, or at the age of from 50 to 65; and if at *this* advanced age, they were so fortunate as to be promoted to the rank of *Colonel*, by the abolition of the regulation of 1806, some chance, I allow, would be afforded of their rising to the rank of Majors General, after from 40 to 55 years of service, or at an age of from 60 to 75 years.

But, if the Regulations of 1806 be maintained in force (as they still are,) it is morally impossible that the Company's officers can ever, generally speaking, rise to the rank of general officers, at a time of life to be useful: they must, from extreme age, long residence in India, and consequent infirmities, become, on their promotion to that rank, worse than useless, serving as a clog upon promotion, by keeping back younger and more active officers, and thus prove a most unprofitable burthen to both the army and the state.

Since the conclusion of peace in Europe, our Government in this country has been involved in a continued series of military operations. The war with Napaul, the Pindarry, and last Mahratta war, the war with Ava, and hostilities with Bhurt-poor, have followed each other in quick succession; and whatever may be the result of the present contests, or however tranquil affairs may remain in Europe, it is evident, from the state of things in India, that our armies in this country must remain constantly prepared for, if not engaged in war, as the only means of retaining our extensive possessions.

If wars in Europe are preceded, and in their course accompanied and followed, by brevets, extended according to circumstances in that quarter of the globe, without any kind of reference to affairs in India, surely the military operations carried on in the East, call also for promotion to our Indian armies, both King's and Company's, without reference to affairs in Europe; and if his Majesty's officers advanced by brevets in Europe, come out to India, and obtain in this country all the advantages of superseding our officers which these European brevets convey, is there any reason why the wars in India should not be accompanied by the local promotion, of at least

one class of our officers, and that the very oldest, who after a long course of painful seniority rise, have obtained the command of our regiments, and who on their return to Europe, however meritorious or brilliant their Asiatic services, cannot reciprocally hope to obtain in that country the advantages of their Indian rank, to the detriment or supersession of even the *very lowest* of his Majesty's officers.

At Bombay, exclusive of the Commander in Chief, our army does not at this moment possess an officer of a rank higher than a Lieutenant Colonel: the two vacancies of Major General on the Company's staff, are consequently there filled by officers of that very inferior grade; nay, the command of a whole division of the Bombay army fell at one time to a Major.

In Bengal and at Madras, although Company's general officers have at each Presidency been selected to serve *double* tours on the staff, to the great detriment of their juniors, yet Colonels also have, from necessity, been likewise placed on it for want of Major Generals; and as I have already shewn, there are but *very few* of our officers now holding even the rank of Colonel.

The issue of future General Brevets in Europe, can have no effect in preventing a recurrence of the serious inconveniences attendant on this want of general officers for our staff; for in consequence of the stop put to the promotion of our officers by the Court's regulations of 1806, the number of our officers thus promoted must ever be ridiculously disproportionate to the encroaching demands of the service*.

The measure of placing our Colonels or Lieutenant Colonels on the staff must therefore be constantly recurred to, and it is likely to prove one of extreme embarrassment to the local

* In the Bengal army, there are only	4 Lt. Cols. of 1812.
At Madras,.....	0
At Bombay,.....	2

Total Company's officers,	6 Lt. Cols. of 1812.
Total in the King's army,	86

The next General Brevet, promoting the Lieut. Colonels of 1812 to Colonels, would therefore promote 86 *King's*, but only 6 *Company's* officers!!

governments ; for officers of these inferior grades must be constantly liable to be superseded by senior Colonels and senior Lieutenant Colonels (though perhaps their seniors only as such) in his Majesty's service, attached to those European regiments, which it may be necessary, from political or other circumstances, to place within their division commands.

The relative proportion of officers of his Majesty's and the Honourable Company's service allotted to the command of divisions on the general staff of the army, will thus be entirely disturbed ; his Majesty's officers will command, on almost all occasions, as they necessarily have done lately to the Eastward, in the Ava dominions, and at Bhurtpoor, and the local governments must either suffer our officers to be displaced from the commands of divisions, and see them ousted of their fair share of emoluments and high commands, or remove his Majesty's Colonels from their regiments to other places and emoluments, or, what is worse, avoid sending his Majesty's regiments where circumstances may specially call for their services, all of these being measures of a highly questionable nature.

I cannot close this subject, Mr. Editor, without calling the attention of my brother officers, both in England and India, to its high importance. Let any one compare the number of his Majesty's corps, with those of the Honourable Company employed in Ava, Arracan, to the Eastward, or at Bhurtpoor, and then compare the relative number of officers of each service commanding divisions and brigades, and the advantages of the king's brevet rank will be evidently in favour of his Majesty's officers. But the following abstract comparison of the relative number of officers in his Majesty's and the Honourable Company's services, holding the rank of Major and upwards, taken from the latest lists, will, perhaps, better than all I have written, serve at a glance to shew the great advantage which the officers in his Majesty's service possess over ours, by the operation of brevets, and by the unfortunate compact entered into between the Court of Directors and the King's government in 1806, not placing the officers of both services on an equal footing, in respect to their promotion to the rank of Colonel and upwards.—

	Field Marshals.	Generals	Lieut. Generals	Major Generals.	Colonels.	Total above Lieut. Col.	Lieut. Colonel.	Major.	Total above Captain.
HIS MAJESTY'S SERVICE.									
27 Mounted Regiments.									
29 Regiments of Infantry.									
2 Battalions Rifle Corps.									
1 Staff Corps.									
3 West India Corps.									
1 Ceylon Regiment.									
1 Cape.									
1 Royal African.									
3 Veteran Battalions.									
10 Battalions of Artillery.									
4 Do. of Engineers.									
152 Corps, His Majesty's Service, ...	7	112	239	226	201	788	780	991	2559
HON. COMPANY'S SERVICE									
21 Mounted Regiments.									
159 Regiments of Infantry.									
18 Battalions of Artillery.									
5 Do. Engineers.									
203 Regular Corps, ...	0	0	12	38	15	95	312	213	620
2 Body Guards.	} No officers.								
8 Local Corps of Irr. Horse.									
1 Rifle Corps.									
Batt. Pioneers and Sappers.									
10 Extra Regts. of N. Infantry.									
16 Do. Provincial.									
9 Invalid Battalions.									
52 Corps not officered.									
255 Corps, Hon. Company's Service.									
For 103 corps less, there is an excess in King's officers of ...	7	112	197	188	189	693	168	778	1939

I shall say nothing here on the disadvantages experienced in promotion by the Honourable Company's leaving 52 corps unofficered. I shall merely observe, that the compact of 1806 was and is unjust, because the Court of Directors consented, without any indemnity for their officers, to place a bar to prevent their old Lieutenant Colonels ever regaining their original place over their juniors in the king's service, although in the attainment of that, or other grades, the latter had previously stepped over the heads of the former. In any fair compact, the terms on both sides must be equal; and his Majesty's government should on that occasion have placed a bar against king's Aide-de-camps, and other junior Lieutenant

Colonels and Majors in the king's service, stepping over their seniors in the Company's service.

Both services are, however, totally distinct lotteries, in which the chances of promotion, or chances of prize, in all the different grades or classes, widely differ. No attempt, therefore, should have been made to assimilate promotion in *one* particular class or grade, (more especially in that high one on which the rise to general officers depends,) without due reference to the previous chances of promotion in all the other classes or grades: this, however, was the absurd basis of the regulation of 1806.

I shall only add, that if the Hon'ble Court, in conjunction with his Majesty's government, should be induced to abolish the anomalous grade of Lieutenant Colonel Commandant, a grade which confers no rank, and would restore that of Colonel to officers commanding regiments, from the date of their obtaining such commands, they would do an act of justice to the whole body of officers belonging to their Indian armies, who by a long course of useful and active services, have established some claim upon the justice, if not upon the favour of the crown, and who in the course of their long services have been most seriously superseded by his Majesty's officers. This boon would promote only about 100 of the very oldest officers in the Company's service, from the rank of Lieutenant Colonel to that of Colonel, after from 30 to 45 years service. It would give the Company's officers no possible advantage over his Majesty's service at large; for it would merely approximate them, in regard to chance of advancement from Lieutenant Colonel to Colonel, a little more than now (and even then in a highly distant degree) with the Royal Artillery and Engineers, notoriously the least favoured and lowest in the scale of promotion of any military body in the service of the king.

That his Royal Highness the Duke of York, the Court of Directors, the local Government, and our present gallant Commander in chief, would not refuse to advocate or ask this boon from his Majesty for our brethren in arms, if duly represented, either in India or England, is the unauthorized, but, Sir, the firm, and I hope not unfounded conviction, of

Your obedient Servant,

A BENGAL CAPTAIN,

Of the year 1812, who belongs to a Regiment of nine Battalions, only one of which has an officer of a higher rank than Lieutenant Colonel, seven of whom entered the service in the years 1782 and 1783

ARTICLE V.
 REMARKS
 ON
 DESERTION IN THE BENGAL NATIVE INFANTRY,
 AND ON
 THE PRESENT SYSTEM OF RECRUITING.

THE ready insertion given to my former communications, induces me to trespass on your pages once more. Warmly attached to the native army, in which I have passed the best years of my life, I could with pleasure dilate on its hard earned fame, and long established character; but as such a course would be foreign to my present purpose, I shall endeavour to confine myself TO THINGS AS THEY ARE. In prosecuting my task, I may incur the charge of personality, but I here disclaim all such intention; my observations are meant to be general, and whenever they may appear otherwise, I beg it may be attributed to the nature of the subject, rather than to any other cause.

It would evince but a slight acquaintance with human nature to suppose, that the number of desertions, and other unfortunate occurrences, which took place about the commencement of the present war*, have not had an unfavourable effect upon the character of this army, and tended to diminish the confidence hitherto placed by our rulers in its fidelity and devotion to their service. I trust, therefore, there are few amongst us, so desirous of burying all recollection of these events in oblivion, as to object to a fair and temperate notice of some of the causes which led to them; and thus, by putting things in their proper light, tend to remove the unfavourable opinions to which they can scarcely fail to have given rise, and possibly lead to the adoption of measures, calculated to prevent any similar conduct from again tarnishing the annals of our native army.

I shall, in the first place, advert to the number of desertions which occurred in the corps proceeding to the lower provinces

* Our Correspondent, we presume, alludes to the war with Ava.—ED.

last year. The causes which led to these desertions have by many been greatly misunderstood ; and as great weight is likely to be attached, both in England and in this country, to the fact of such numbers having left their corps at the commencement of a war, I think it of some moment to show, that these desertions were not owing to the war alone, but would in all probability have taken place, under similar circumstances, at a period of profound peace.

It is well known to officers who have had any experience of our native soldiers, that the men of Hindostan have a great dislike to the lower provinces, and that this feeling always causes a number of desertions, and applications for discharge whenever a corps is ordered down the country. It is also equally well known, that corps long quartered in Oude, always lose a number of men on leaving that province, even for stations not very distant. Now as nearly all the corps ordered down last year, in which any extraordinary number of desertions took place, (except the flank battalions, a description of corps by no means popular with the men,) marched from Oude ; and as the war would have caused applications for discharge to fail, and most of such applicants would not have hesitated to run off, rather than proceed to Bengal, a greater number of desertions than usual might reasonably have been expected. Desertion may be also said to have been fostered in this army ; for we have hitherto found so little difficulty, in keeping our corps complete, that no trouble has been taken to secure deserters. Desertion in consequence became a part and parcel of the army, and may be truly said to have grown with our growth and strengthened with our strength, while the impunity enjoyed by deserters caused the men to consider desertion as an offence of less magnitude, or at any rate less likely to be followed by punishment, than simple neglect of duty : thus, from a certainty of escape, and prospect of reinlistment (if young) in some of the numerous local or other corps, few men hesitated to desert, when desirous of getting rid of any real or imaginary grievance.

I must also in this place advert to a cause, calculated in my opinion, to increase desertion, if not general discontent : (I however by no means intend to insinuate that it had any effect on the corps ordered down last year, I merely wish to

notice its occasional existence :) I mean, the practice of refusing discharges to men who are clearly entitled to them ; for the terms on which the native soldier enlists are clear,—after serving three years, he is entitled to come forward in time of peace, and claim his discharge, which cannot be legally refused, unless the vacancies in his company would thereby exceed 10 (or probably that more than 100 vacancies would be occasioned by such discharge in the regiment.) Now I believe it cannot be denied, that discharges have been, and are refused to men, whose periods of service have expired, when no legal grounds for such refusal exist ; and although, if these men are really respectable, and possessed of property in our provinces, they may prefer waiting for some change in the commandant's opinion, to deserting, there can be no doubt many would desert, rather than be thus forced to continue in the service, or march to a quarter they disliked ; while others, thinking application vain, would desert without it.

If, then, I am correct in what I have stated, (and I challenge enquiry,) it seems clear, that the desertions from corps ordered into Bengal last year cannot be attributed to the war alone ; and that although the war, from preventing discharges, may have tended to increase the number, it had no greater effect than it would have had *on any other army* presenting equal facilities for escape.

With a view, however, to lessen desertion in future, and eventually to eradicate it from this army, I would recommend,—

1st. That it be made imperative on every commandant of a corps, to grant discharges in time of peace, (on application) to men whose period of service had expired.

2d. That effective measures be adopted for securing deserters.

3d. That they be prevented, as far as practicable, from reinlisting in other corps, whether of the line, local, or provincial.

The first may be secured, by keeping registers in every company, and one in the regiment, for the entry of applications for discharge ; these registers to be produced at the yearly or half yearly inspection. The record must depend on the magistrates and their police, and I conceive, without very culpable neglect on their parts, almost every deserter must be

apprehended ; and their reinlistment to any extent, might be prevented by publishing in General Orders, once a quarter, minute descriptive rolls of all deserters, who had left their corps during the preceding three months.

Recruiting is so intimately connected with the foregoing subject, and the efficiency of the army, that without due attention to this essential point, every attempt to remedy existing defects, or to introduce improvement, must prove abortive : and I regret to say, that for some time, great and apparently well grounded complaints have been made, not only of the difficulty experienced in providing good recruits, but of the number of men, very deficient in physical power, and personal appearance, that are finding their way into our ranks. Many officers who recollect when every native corps had supernumeraries attending drill, and living at their own expense for the sake of securing enrolment, attribute the present difficulty in recruiting to a growing dislike throughout the country to the service ; but the encrease which has taken place during the last 15 years to the army, in all its branches, is quite sufficient to account for it.

It must also be remembered, that with the encrease in the numbers of our army, no corresponding extension of our recruiting limits has been made ; and I cannot discover any good reason against recruiting along the banks of the Jumna, as high as Delhi, and in the Doonab, as far up as Meerut. If the attempt were made, I have no doubt many able bodied effective soldiers would be procured.

An attempt to recruit should also be made in Bundelcund. The Boondelahs are a fine race of men, and I think would enlist ; but at present, there is a feeling against them ; the native officers say, “ The Boondelahs never stay with their corps, they always desert ;” but the trial is certainly worth making.

The prejudice in favour of high caste has not only increased the difficulty of recruiting, but has introduced into our ranks such a host of Bramins, that in many corps they outnumber the Rajpoots and Soodras together. The influence of these men (many of whom set up for religious characters) over the minds of the other Hindoos, is beyond what can well be conceived by those who have not witnessed it ; and it being the

characteristic of the Bramin caste to prefer ease and laziness, to the slightest trouble or inconvenience, they use their whole influence to prevent if possible any compliance with demands on the services of the sepoys, in the smallest degree at variance with what they consider the usage, or to use an expressive Hindoostanee word, the *dustoor* of the service. They are moreover the most troublesome men we have ; their petty rogueries, and sneaking villainous propensities, are notorious ; and out of three men punished in a native corps, two will be found to be Bramins.

It may also be very much questioned, whether the plan of levy battalions is at all calculated to furnish fine men, or improve the character of the army ; for the same description of men will not enlist in a *Gulhakee Pullun*, ignorant of the corps they may be drafted to, as will take service in an old known regiment : and conceding to the levy officer as much public spirit as falls to the lot of most men, he is not I think likely to be so particular in recruiting for a depôt corps, as an officer performing the same duty for his own regiment. The levy officer's object is *quantity*, not *quality*.

In recruiting, physical capability and personal appearance should be chiefly attended to. An able bodied man of low caste is more likely to perform his duty with effect, than a puny Bramin. The only restraint as to caste placed on the recruiting officer, should be to prevent his enlisting too many Bramins. Some change might be beneficially made in the period of service of lads enlisted under 17 years of age, and great attention should be paid to their appearance ; for if required to march, and carry their knapsack, musquet, and ammunition, many of the young men I have seen enlisted, would sink under the fatigue of a common march, and the load scarcely ever fails to spoil the figure and carriage of the men who are enlisted very young. The declaration and oath for the volunteer regiments might be altered, to meet the nature of the service the men enlist for ; this would prevent the possibility of their pretending ignorance of their engagements. While on this subject, I cannot refrain from alluding to the propriety of reducing one of our grenadier companies ; every corps might then have two fine flank companies, instead of

three very indifferent ones, as is the case in many corps at present*.

After due attention has been paid to the recruiting, and corps are furnished with the proper and fit material, the formation of the soldier, both in his military exercises and personal feelings, must depend on the system that may be adopted towards him during the first year of service; and to no people is the proverb, "Train up a child in the way he shall go," more applicable than to the native soldiers of Hindostan. That this is in a great measure neglected, I fear must be confessed; and as expertness in military exercise, *even supposing due attention to be always paid to it*, is not of itself sufficient to form a good and efficient soldier, I would earnestly recommend this highly essential point in the formation of the native soldier's character, to the notice of those who are intrusted with the honourable and important trusts of commanding corps.

In furtherance of this object, and that every sepoy may be accustomed from his first entering the service, to do on ordinary marches, what must be required of him in the field, clear and explicit rules should be laid down, and *enforced*, throughout the service, for the quantity of baggage to be carried in the knapsacks of the men; and in doing this, reference must be had to the total weight each man will have to carry, including musquet and ammunition. Without some regulation of this sort, this point will never be properly attended to; some corps will be found carrying a full quantity, and others moving with empty knapsacks; and the consequence is, that when the men of the corps compelled to march with full packs, meet those who are permitted to go empty, they become discontented, from thinking they are *unnecessarily loaded*; and many officers would rather allow the practice to fall into disuse, than insist on their men continuing to do, what corps quartered with them were exempt from†.

* We, on the contrary, think that the more *elite* companies there are in a corps, the more likelihood there will be of fine men.—ED.

† Our native corps on the Bengal establishment are very much in want of a code of regimental standing orders, regulating this and every other point on which uniformity is desirable throughout the service. Sir John Craddock at Madras, and Sir Charles Colville at Bombay, have supplied this want, we believe, at the sister Presidencies.—ED.

A regulation also directing, that each man should pay in proportion to the quantity of baggage he might carry on the cattle, instead of every man paying equally, as at present, would cause an immediate reduction in the baggage of the men, to a greater extent than could be effected by the strictest orders.

It may be said, all these points are within the power of the commanding officers of corps. It may be so, but if they have never hitherto been attended to, I see no reason to expect they ever will be; and that some regulations are highly necessary, seems too evident to require any comment.

Much has been lately said and written on the character of the sepoys, and opinions any thing but favourable to the native army of this Presidency, have obtained a degree of currency which, adverting to the former character of the army, and its conduct on all occasions in the field, seems to be wholly unfounded, and which the experience of more than half a century should have secured us from: that these opinions have extended beyond the sepoys, may also, I fear, be more than suspected. I would then earnestly entreat all those connected with the native army, to look at its real state and condition; and if defects, or any other causes are discoverable, calculated to give some colour to the opinions above alluded to, let the proper remedies be instantly applied. If the intercourse and good understanding which ought to subsist between the European and native portion of our regiments, have in any instances been interrupted, or discontinued, let it be renewed and encouraged: the more the European officers and sepoys know and see of each other the better.

Let the men see and feel, that the officers take an interest in their welfare and character; that the only road to promotion and favour is attention to duty*, and forward readiness to meet the calls of the service; that backwardness on such occa-

* Promotion in the native army is, we fear, obtained at present more by seniority than by "attention to duty" or proper qualifications. If every sepoy, after seven and fourteen years service, obtain an increase of one and two rupees per mensem, and the same proportional increase was given for servitude in the other ranks, and the pays of Jemadars considerably increased, we have no doubt, a great improvement would be effected in our native army.—Ed.

sions is not only a disgrace to the individual, but injurious to the character of the corps : teach them to feel a proper pride in themselves, and to value themselves on the character of their regiment ; and that that character must depend on their own conduct, individually and collectively ;—and I will venture to promise the officer who attempts this, that his efforts will be crowned with success, and meet their reward, in the *satisfaction* he will derive from the conduct of his men. Perfection cannot be attained without labour and attention : let a due portion of both be given to the condition and discipline of this army, and it will be found to possess the same spirit and military qualities, which so eminently distinguished it in the brightest period of its fame, when led to victory and conquest by the great and immortal Lake.

AN ADJUTANT OF BENGAL NATIVE INFANTRY.

Although belonging to a different branch of the service from our Correspondent, the “Adjutant of Bengal Native Infantry,” yet we urgently solicit, and shall readily insert communications from our brother officers attached to the several armies of the three Indian Presidencies, on any points connected with the improved efficiency of their various arms of the service ; and it will ever afford us peculiar gratification, to give insertion to any articles in support of the “hard earned fame, and long established character” of our native forces.

It is not to be supposed, that an officer who has never seen our native troops engaged in actual warfare, and is uninformed of their services, manners, habits, customs, prejudices, character, or languages, can, at once, grant them that implicit confidence which all are accustomed to place on British soldiers, in every quarter of the globe.

But it is evident, that no officer at the head of troops in India, can exercise command with benefit to the state, who openly refuses, or indirectly hesitates, to place that reliance on the greatest portion of his army, which the past conduct and services of our native troops most justly claim ; a reliance which distinguished Clive, Coote, and Cornwallis, equally with Lake, Wellesley, and Hastings ; all of whom proudly cherished that

confidence which can never fail to engender a reciprocity of feeling between the General and the soldier, and which in times of difficulty and danger, enlivens courage, improves discipline, and leads to certain victory.

“The unfortunate occurrences” referred to by our Correspondent, as having taken place some little time ago in the Bengal army, have not, we feel certain, in the slightest degree diminished “the confidence hitherto placed by our rulers in its fidelity and devotion to their service.”

The enquiry into the mutiny at Barrackpore, for which the army is indebted to our present Governor General, must have dispelled all doubts, if ever any were entertained on that subject; and has no doubt traced to their proper source, occurrences, which we wish may be proved not to have had their origin in any want of knowledge of the customs of our native troops.

The invidious comparisons instituted between the services of the European and native troops, and which some time ago found a place among our public prints, were not, we believe, founded on the “unfortunate occurrences” above referred to; and we trust they were neither influenced, nor called forth, by sentiments currently, though no doubt erroneously, reported to have been expressed, in a quarter from whence we never can believe them to have issued.

Leaving those who have ever unjustly entertained or expressed sentiments against our native troops, to that self-reproach which better information must in time inflict, we proceed to offer some remarks on the more immediate subject of our Correspondent’s letter.

The “Adjutant of Bengal Native Infantry” has stated, that “the men of Hindoostan have a great dislike to the lower provinces,” but he has given no reason for this dislike.

The noted difference existing between the soil and climate of our eastern, and western or midland provinces, a difference complained of by all ranks of natives, as tending to bring on fevers and bowel complaints, with all persons coming from the upper to the lower provinces, and which causes the desertion of our domestic servants, as well as of our sepoys, and the no less well known, and keenly felt difference which exists

between the coin in which payments to the troops are made*, together with the dread of removal far from home, and thereby increasing the difficulty of obtaining furlough, will probably account for a dislike, which has always been deep rooted with the higher castes of Hindoos, by whom our ranks in the native army of Bengal are chiefly filled.

A writer in the *Oriental Herald* for August last, truly remarks, that "the wages of hired servants and cattle have within the last 20 years advanced one third, when employed by persons at fixed stations, and even more when hired by soldiers, who may have to march from one end of our possessions to the other;" and on these and other grounds he submits, "how far it has become not only an expedient act, but rather one of strict justice," to increase the pay or allowances of the Bengal sepoy.

All who are aware how much our native soldiery in Bengal accumulate, and remit, both publicly and privately, to their homes and families, may, however, doubt the *necessity* of a measure, which the fullest enquiry might prove to be inexpedient, if not exceptionable; and we shall only here remark, that the attention of Government has, since the commencement of the Burmese war, been specially given to improve the situation of our native troops, when employed in warfare beyond our territories; and we feel certain similar attention will always be readily directed to this subject, whenever his Excellency the Commander in Chief deems it of sufficient importance to require their notice.

It may be difficult to find good ground for denying, that the late desertions or discontents in the Bengal army, may not, in some degree, have been influenced by other causes than those to which our Correspondent refers. The link which attaches the native soldier to his European officer, is asserted by the writer in the *Oriental Herald*, to have of late years been seriously weakened by the abstraction of a great number of the latter, for the numerous situations away from corps, which the necessities of the service have called for; as

* In our western and midland provinces a sepoy receives 7 sonat rupees, in our eastern provinces only 6. 11. 2. sicca rupees.

well as by the increased difficulty and expense to which the men of corps under marching orders have of late years been subjected in procuring carriage for their baggage, under the orders of Government, which have "very properly tended to secure its subjects from impressed service."

We may however remark, that the Madras troops have been subjected to the operation of all these very causes, and yet that many of the corps of that army have embarked on board of ship without the loss of a man.

But at the sister Presidency, the service at Rangoon was popular. The soldiery had none of that experience or knowledge of the climate which the Bengal army possessed, nor were they previously subjected to expensive marches, of many hundred miles; nor subsequently (except at Arracan) exposed to insuperable difficulties of country and climate, between them and the enemy. Accompanied and assisted on the march by fewer, but more permanently attached followers than our sepoy in Bengal, (who are never accompanied by their families,) the Madras sepoy left the Indian peninsula, only with the prospect of a short sea voyage, looking forward to all the advantages of increased allowances, Government rations, and a successful campaign in a populous and fertile country.

The practice of refusing discharges to men entitled to them, which, the "Adjutant of Native Infantry" remarks, occasionally prevails in Bengal, and seems to think influences desertion to a certain extent, could not however have obtained existence at the Madras Presidency.

The half yearly inspections of native corps, by officers commanding divisions, are on that side of India far too efficiently conducted, and take place much too often, to admit of any such practice obtaining a footing there, even in any one corps, much less in the army generally: and this system of constant minute inspection, with the established custom of always keeping a certain number of boys (generally the sons of the men) constantly in pay, and attached to corps, are points in which, we believe, the army of the sister Presidency differs very materially from that in Bengal.

It is no doubt desirable to see the superior races of men in Bundelcund, Rohilcund, the upper part of the Doab,

the western Rajpoot states, and the extreme eastern and northern parts of our provinces, with Jauts, Arabs, &c. &c. filling our ranks, along with the discontented subjects and "host of Bramins" thrown into them from Oude, and to the best races of our midland provinces; and why, we ask, cannot officers in command of corps in those quarters induce the peasantry to enlist?

We know that some corps, during Lord Lake's war, were at their own request excused from receiving recruits from a "Gulhake Pultun," and prided themselves in keeping their ranks filled through the exertions of their European officers. It is true, many prejudices must yet be overcome, and possibly greater allurements must now be presented than our native service at present affords, before these objects can be fully attained, or our ranks be filled from provinces where the upper class of agricultural labourers are probably daily finding employment more suited to their habits, and little less profitable, than the situation of a sepoy in a marching regiment.

It is with some, we believe, a serious question, whether the British system of corporal punishment be not a principal cause deferring many high minded natives from entering our ranks. We do not mean to imply that such punishments are by any means frequent; on the contrary, we know them to have been singularly rare in the Bengal army; but we would gladly see this punishment banished from our native ranks: for we are impressed with a conviction, that our system of discipline, and modes of equipment, are not nearly so repugnant to the natives as our cats-o'-nine-tails.

Perhaps honorary distinctions, or pecuniary rewards, to such of the upper classes of natives as brought forward good recruits, by hundreds or thousands, might be attended with advantage.

With the fullest sense of its vital importance, and considering it highly worthy of a much more serious investigation than we have either time or power to bestow upon it, we hastily and unwillingly close our notice of this interesting subject, with remarking, that as the tone and feeling of the officers of the army must ever in a great degree regulate that of the soldiery; so, although both be subject to those variations which peculiar circumstances occasionally communicate to

frail humanity. we trust they will ever be found such as can only reflect honour on the character of the Indian army. Should, however, exceptions ever occur, they cannot be too openly acknowledged, or their causes be too early noticed, or too closely traced and enquired into. —EDITOR.

ARTICLE VI.

ON ECHELLON MOVEMENTS.

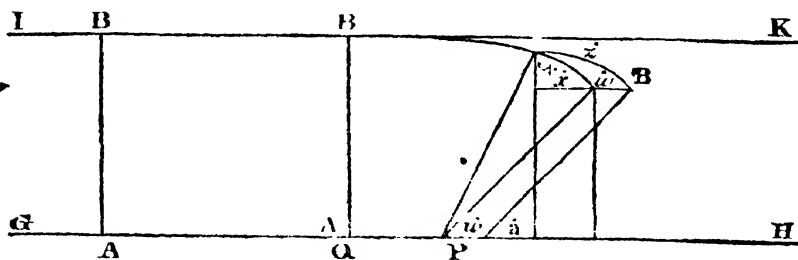
To the Editor of the Bengal Military Repository.

SIR,

I beg to offer for insertion in your Repository, the following table, which may be of use to some of your military readers. I will, however, first mention the principle and method of its construction. In an echelon movement, an officer conducts the inner flank man of his company along a straight line, to which the line in which the company is dressed is always perpendicular, until the inner flank man arrives within a certain distance of the place he is to occupy in the new line. He then orders "Right or Left Shoulders Forward," on which the inner flank man, gradually turning his shoulder, and the rest of the company conforming to this change, the company arrives in full parallel front into the new alignment. The rate at which the outer flank man has to march, must thus depend on the turning of the inner flank man's shoulder; but as the rate intended to be produced in the march of the outer flank man is nowhere mentioned in Dundas (at least that I am aware of) I suppose it to be the wheeling step and pace, for the outer flank man, as laid down in Dundas, Section 17, for wheels from column into line, or from line into column; that is, 120 steps in a minute, and each step 33 inches. With this assumption, it can be determined at what distance of the inner flank man, from the place he is to occupy in the new line, the officer should order "Right or Left Shoulders Forward," so that the outward flank man marching, on receiving this order, at the rate abovementioned, and the inner flank man continuing his original rate of march, the company may arrive in full parallel front into the new alignment. A solution of the following problem will determine the distance for any length of the company's front, and for any angle which the new position may make with the old.

Two bodies A and B, placed in a line perpendicular to the line GH, and at a given distance from each other, are moved with equal velocities; A in the line GH, and B in the line IK parallel to GH. Let it be required to find from a point

P in the line GH, a distance PQ, at which a velocity being given to B, which is to the velocity of A, as $m : n$, (m being greater than n .) the line joining A and B, may on the arrival of A at the point P, have any given inclination B α H, to the line GH, A and B preserving their original distance?



Let z = the curve described by B, $w = PQ$, and let the distance of B from A be denoted by r . Let also the cosine of any angle of inclination be denoted by x , and the sine by y . It is evident, from an inspection of the figure, that the square of the fluxion of the curve, = the square (of the fluxion of w + the fluxion of the cosine) + the square of the fluxion of the sine, or that

$$z'^2 = (w' + x')^2 + y'^2. \quad \text{Let by the question } z'^2 = w'^2 \frac{m^2}{n^2};$$

$$\text{and since } y = \sqrt{r^2 - x^2} \text{ therefore } y' = - \frac{x x'}{\sqrt{r^2 - x^2}} \text{ and}$$

$$y'^2 = \frac{x^2 x'^2}{r^2 - x^2} \text{ by the substitution of these quantities, and a}$$

$$\text{slight operation, there results, } w'^2 + \frac{m^2 - n^2}{n^2} - 2 w' x' =$$

$$x'^2 + \frac{x^2 x'^2}{r^2 - x^2} \text{ and putting } b = \frac{n^2}{m^2 - n^2} \text{ and resolving the}$$

$$\text{quadratic } w' = b x' \pm \sqrt{b^2 x'^2 + b x'^2 + \frac{b x^2 x'^2}{r^2 - x^2}}. \text{ By some}$$

$$\text{further steps } w \text{ will be found} = \dots \dots \dots$$

$$b x' \pm \sqrt{b^2 + b} x' \frac{\sqrt{r^2 - \frac{b}{b+1} x^2}}{\sqrt{r^2 - x^2}} = \dots \dots \dots$$

$$b x' \pm \sqrt{b^2 + b} x' \frac{\sqrt{r^2 - d x^2}}{\sqrt{r^2 - x^2}} \text{ if } d \text{ be put} = \frac{b}{b+1}. \text{ The}$$

fluents of both sides being now taken, their results . . .

$$w = b x \pm \sqrt{b^2 + b} \left\{ x + \frac{1-d}{b r^2} x^3 + \frac{3-2d-d^2}{40 r^4} x^5 + \&c. \right\} =$$

$$x + \left\{ b \pm \sqrt{b^2 + b} \left\{ 1 + \frac{1-d}{b} \cdot \frac{n^2}{r^2} + \frac{3-2d-d^2}{40} \cdot \frac{x^4}{r^4} + \&c. \right\} \right\}$$

x in the present case represents the cosine of the angle BAH , and therefore the cosine of $(90^\circ - \frac{1}{2} 90^\circ)$ $(90^\circ - \frac{1}{2} 60^\circ)$ $(90^\circ - \frac{1}{2} 45^\circ)$ or 45° , 60° , and $67^\circ \frac{1}{2}$. The values of x , to radius r , corresponding to these angles, being used in the formula, gave three values of w , from which all the other values of w given in the table, were determined by multiplying these three values by $\frac{r'}{r}$; r being the radius to x and r' the radius to any other cosine x' . The correctness of this method of computing all the other values of w , will be seen by an inspection of the formula.

TABLE,

Shewing the distance of the inner flank man from the place to be occupied by him in the new line, at which, in an echelon movement, an officer should order "Right or Left Shoulders Forward," so as to bring his company in full parallel front into the new alignment.

Angle which the new position makes with the old.				Values of w in paces of 30 inches each. The inner flank marching in ordinary time.								
				90°		60°		45°				
				<i>Ps.</i>	<i>In.</i>	<i>Ps.</i>	<i>In.</i>	<i>Ps.</i>	<i>In.</i>	<i>Ps.</i>	<i>In.</i>	<i>In.</i>
Front of Company	5	or	3	20	3	28	2	21	2	2		
	10		7	10	7	26	5	13	4	4		
	15	"	11	0	11	25	8	5	6	6		
	20		14	20	15	23	10	27	8	8		
	25		18	10	19	21	13	19	10	10		
	30		22	0	23	20	16	10	12	12		
	35		25	20	27	18	19	2	14	14		
	40		29	10	31	16	21	24	16	16		
	45		33	0	35	15	21	16	18	18		
	50		36	20	39	13	27	8	20	21		
	55		40	10	43	11	30	0	22	23		
	60		44	0	47	10	32	21	24	25		
	65		47	20	51	8	35	13	26	27		
	70		51	10	55	6	38	5	28	29		
	75		55	0	59	5	40	27	31	1		
	80		58	20	63	3	43	19	33	3		
	85		62	10	67	1	46	10	35	5		
	90		66	0	71	0	49	2	37	7		
	95		69	20	74	28	51	24	39	9		
	100		73	10	78	26	54	16	41	11		

As it may be useful in practice to have an easy method of computing mentally the required distance, in the same way as we find the length of a company's front by taking 3-4ths of the number of files, it may be proper to mention, that by an inspection of the table, it appears that,

When the new position makes an angle of 90° with the old, the value of w in paces is very nearly 4-5ths of the number of files.

When the new position makes an angle of 60° with the old, the value of w in paces is very nearly 6-11ths of the number of files.

When the new position makes an angle of 45° with the old, the value of w in paces is very nearly 2-5ths of the number of files.

The values of w , as given in the table, correspond to one more than the number of files laid down in the table, as the centre of the inner and outer flank man are supposed to be the moving points, that is to 6, 11, 16, &c. instead of 5, 10, 15, &c. But as a covering serjeant always places himself on the outer flank, and this adds one to the front of the company, the values of w apply to a company of the strength mentioned in the table.

I am, Sir,
Yours, &c.

B.

NOTE.—Our Printer has experienced some difficulty in decyphering the algebraic expressions, which were rather illegibly written by our Correspondent. We fear this may have caused errors, which we wished, and have taken some pains, to avoid.—ED.

ARTICLE VII.

ON LENGTH OF PACES.

To the Editor of the Repository.

SIR,

Having frequently heard old officers observe, that they thought 22 inches per man too much ground to allow for sepoys, I once took it into my head to ascertain, whether, if less were allowed, it would cause any difference in wheeling on halted pivots. The following was the result of my calculations, viz. that allowing 21 inches only, the division must be halted at one pace less than the number of files in it ; and, allowing 20 inches, at two paces less. Also that in strong divisions, halting at the same number of paces as there are files in a division, with 22 inches allowed per man, gives not a correct quarter circumference : for example, the quarter circumference of a division of 30 file is 31 paces ; and, in proportion to its greater strength, this discrepancy increases. In weak divisions, too, with an allowance of only 20 inches, there is a difference between the pace halted at, and the quarter circumference ; while with 21 inches, no such variations are observable. To some people I may appear to have lost my time in calculating at all ; but to the reflecting, my lucubration may not seem quite useless.

Your's,

NOTE.—We wish our Correspondent had been a little more particular in detailing in inches the dimension of his paces, and in degrees of a circle the extent of the wheels he alludes to. We infer from what he incidentally mentions, that he refers to wheels of a quarter of a circle, or 90 degrees.—Ed.

ARTICLE VIII.

RULES FOR WHEELING.

To the Editor of the Repository.

SIR,

If you deem the following rules, and table, worthy of a corner in your Repository, they are much at your service.

Yours,

RULE 1st. "In all moveable wheels not exceeding five paces with the old direction, let the officer describing the smaller arc, when he arrives within a distance, from the point of intersection, of half as many paces as there are files in his division (including himself,) commence the wheel with "Right Shoulder Forward," and terminate it when he has advanced the same number of paces beyond the point.

2d. " When the wheel is of six or seven paces, let him commence within a distance of as many paces as there are files in three fourths of his division.

3d. "When the wheel is of eight paces, let him commence at one pace less than he has files, unless his division exceed 45 files in strength. •

4th. " When the wheel is of 16 paces, as in changing the head of a column at quarter distance by the countermarch of subdivisions, let the point to be wheeled round be marked at a distance of twice (bating two) as many paces as there are files in each subdivision; and the officers commence wheeling immediately."

Table showing, when an Angle of 8 Paces, or 90 Degrees is required, when to begin the moveable Wheel.

No. of Files.	Begin from the point of intersection at a distance of about	Pace at which to order "Forward" passing the point.	Total ordinary paces by the officer.	Wheeling paces by the outer flank man, to come square to the new front.
	<i>Files, or Paces. In.</i>			
10	13½ or 9 23	8	17	27
15	20 „ 14 20	13	27	43
20	26¾ „ 19 16	18	37	59
25	33½ „ 24 13	23	47	75
30	40 „ 29 10	28	57	91
35	46¾ „ 34 6	33	67	107
40	53½ „ 39 3	38	77	123

Suppose 20 file in the division, and the wheel commenced at 26 files distance, or 19 paces. When taking the 18th pace, after having passed the point of intersection, order "Forward," and the next step taken by the company will be the ordinary step. In the mean time the outer flank man will have taken 59 wheeling paces, equal to the 37 paces taken by the officer.

In Captain James's Appendix, the following scale is laid down for defined angles, viz.

Of 1 pace, begin at $\frac{1}{4}$, the number of files.

2 do.	„	„	$\frac{1}{4}$	„	„	„	„
3 do.	„	„	$\frac{1}{3}$	„	„	„	„
4 do.	„	„	$\frac{1}{2}$	„	„	„	„
5 do.	„	„	$\frac{2}{3}$	„	„	„	„
6 do.	„	„	$\frac{3}{4}$	„	„	„	„
7 do.	„	„	$\frac{3}{4}$	„	„	„	„
8 do.	„	„	1	less than that number.			

* Our readers may wish with ourselves, that our Correspondent had explained *what* point of intersection he alludes to.—ED.

ARTICLE IX.

ON THE IMPROVEMENT OF THE MUSKET.

To the Editor of the Military Repository.

SIR,

It is neither my intention nor wish to introduce myself for the first time to the public, by attempting to criticise any part of the letter of your correspondent F. B. "On the Necessity of improving the Musket:" I rather suspect the inefficacy of the fire of scapoys is to be attributed more to the badness of the powder, and the inadequate instruction of the men*, than to the original bad construction of the musket, particularly at present; for many of your readers have, no doubt, seen the muskets which have been sent out to this country within the last four years, and must have remarked their superiority, especially in the locks, to those formerly in use. The weight of the musket is the chief objection in this country; but this might be remedied by adopting the new pattern artillery fuzil. I have been told the light infantry brigade now on service is supplied with them. They are more adapted for this climate, and I fancy would prove equally effectual with the musket, against any native power.

But, Sir, it is not the musket alone that requires alteration, but also the *pouches*, and indeed the whole dress of the native army. The coats have of late been much better made, but, in my humble opinion, would be still more improved by making the collar about double its present height: while stocks of a proportionate height, would be preferable to beads. The pantaloons should be made wider. Shoes of the English pattern should be adopted, and the men allowed to wear black gaiters on undress, and white on full dress parades, similar to those worn by the European artillery. The gaiters would not cost the men much; for the old white pantaloons might be made to answer the purpose; indeed the old rate of half mounting stoppages would be quite sufficient to cover every expense: and

* At Madras, we believe, marks of distinction (medals of silver and brass) are with effect given to the three best marksmen in each company, by way of exciting emulation.—ED.

no person I fancy will dispute, that the military appearance of the native soldiers, both individually and as a body, would be greatly increased by the change. I am aware that some will object to it, on the score of its being disrespectful in a native to come into the presence of his officer with shoes on. In reply to this, I have only to ask, why is it not thought equally disrespectful in a commissioned or non-commissioned officer? Besides, I think, Mr. Editor, that soldiers ought be exempted from these little forms. The chakos also (now worn by some regiments only) with feathers, should be the standard pattern for the whole army, with the exception of the light infantry, who ought to have a green worsted lace on the cap, instead of the brass band now worn. In short, native soldiers ought, as far as practicable, to be put on the same footing as European troops.

I trust, Mr. Editor, I may not be thought too presumptuous in thus giving my opinions to the world: my motives are the respectable and soldier-like appearance of the army to which I belong; and I only have to regret some other person better qualified than myself has not written on the subject. Should you deem what I have said worthy of a place in your interesting and useful work, you may probably find room for it in your next number*.

Wishing you every success in your undertaking,

I remain,

Sir,

Your obedient Servant,

*Between 5° and 22° N. Lat. }
November 1825.*

A SUBALTERN.

NOTE.—We do not think, with our Correspondent, that gaiters would improve the appearance of our native troops.

Any alteration in the dress of our native troops requires, we believe, the previous sanction of the Court of Directors.—ED.

ARTICLE X.

TRANSLATION

FROM

THE BULLETIN DES SCIENCES MILITAIRES

FOR MAY 1825, OF A WORK ENTITLED

“Experiments carried on by the French Navy with a new Piece of Ordnance; the Changes which must result therefrom; and a fresh Examination of some Questions relative to the Navy, to the Artillery, and to the Attack and Defence of Places, by M. Paixans, Lieutenant Colonel of Artillery. Paris, 1825.”

WE shall allow the author to speak for himself, in the account he has brought forward, of the important experiments made at Brest with the new piece of ordnance he proposed.

“In a work published in 1822, I have examined the actual means of our maritime force, and proposed various alterations. A new piece of ordnance, steam vessels, vessels guarded (*cuirassés*) against artillery, &c.

“Among these new means, the piece intended for the destruction of large vessels has just been tried. The experiment has been made,—it has been reiterated,—it has succeeded. I proceed to give an account of it.

“Cannon, it is known, discharge balls horizontally, the greatest weight of which is 36 lbs. : but balls produce effects against a vessel, such as are easily repaired. Mortars discharge shells as large as 80 or 150 lb. balls, which being filled with bursting powder, produce a dreadful explosion; but these shells falling in a vertical direction, seldom strike their object. What I have proposed, are guns to throw even the largest shells horizontally, with a force and accuracy equal to any cannon balls. A shell being thus thrown, its explosion will, if it burst, either open the side of a vessel, or produce great ravage, and fire on board.

“This idea is not new, for we already have hollow balls and snells; but these projectiles have heretofore possessed less accuracy of range, as they increased in size, and many persons have tried in vain to fire large shells horizontally.

adopted by our vessels of the line, but only in small numbers, and taking certain necessary precautions.’”

The Academy of Sciences having received a communication of the results, also made a report, in which they gave the proposed invention their entire approbation.

“To decide what should follow these experiments, the consultative naval committee, augmented on this occasion by several members, was charged to examine more fully into the whole matter, to answer certain questions put by the minister, and to propose what measures should be taken.

“These measures were such as, under the circumstances of the case, exhibited both prudence, and regard for the welfare of the service; that is to say, it was ordered that the proofs should be frequently repeated on a large scale; that the new piece should be placed at various distances, and under a variety of circumstances, from thence to be discharged, comparatively, with a certain number of the best pieces in use, to try these with hollow projectiles; thus adopting for ordinary cannon, one of the improvements that had been tried with the bomb cannon.

“These new experiments produced results similar to the first: not only were the effects of the 80 lb. shells beyond all comparison superior to the effects of ordinary balls, but superior to that of hollow balls, in a degree far beyond the proportion supposed.

“The following is what was stated in the process verbal.

“*‘The commission has assured itself of the prodigious havoc occasioned by the shells; it is not doubted that a vessel might easily be set on fire by them; their effect is so terrible, that if one or two were to burst among its guns, they would probably compromise the defence of the vessel attacked. They produce in timber a havoc which, at the water line, would cause a vessel to sink at once.’*

“Perhaps it will be asked, how it happened that the vessel serving as a butt was not destroyed. The reason is this, every necessary precaution was taken to prevent it, pumps, casks, cables, workmen, &c. and the discharges from the piece took place successively, at intervals: besides, the two commis-

sions at Brest have themselves afforded an answer to this question.

“ Moreover, when instead of firing against an empty, wet, uninhabited vessel, where nothing offered itself to the shells, we, in battle, fire against an armed, tarred, and crowded vessel, every thing in which would offer an object to explosion : powder circulating in all directions, a total conflagration will every instant be impending, and we may easily conceive what would be the result.

“ On the subject of the range of the bomb cannon (notwithstanding the great weight of its projectiles,) also of its accuracy, solidity, recoil, &c. curious results have been obtained, which will render us better acquainted with the principles of artillery, will dissipate several errors, and when well studied, will not be less useful to theory than to practice.

“ Several objections have been started, but these can as reasonably be opposed to things which have long been in use, while we may deduce strong reasons from them in favour of those that are new. Far from desiring to disguise any of those objections, I wish, on the contrary, to recall all of them ; but as these lead to a very dry discussion, I shall reserve it for the notes.

“ Notwithstanding these objections, the navy, after having discussed all of them, has doubtless felt convinced, that experience had dissipated some, while it would be easy to remedy others ; and that the new piece should be admitted ; for the process verbal bears the following conclusion :—

“ ‘ *The commission unanimously acknowledge, that this piece would have a wonderful effect in batteries on the coasts : that no vessel, whatever its strength, if from 300 to 600 toises distant, could hold out against such a battery : that to arm floating batteries, sloops, or gun-boats and steam-vessels, with this new artillery, would be very advantageous ; and the commission thinks, that for the defence of roads and coasts, or in the attack of vessels in a calm, or when windbound, the bomb cannon would be infallibly successful.*’

“ This conclusion confirms that arising from the first experiments, and is if possible of still greater weight, because

the trials made were on a larger scale, and in coming to a decision, all the arguments against the adoption of the piece in question were duly weighed.

“As to the admission of bomb cannon on board of large ships, it is chiefly on that point that any opposition can arise. The principal objection started is, that it will be dangerous to employ so many loaded projectiles, in the midst of a numerous crew: and yet in regard to this nice point, the navy have seen, that nothing more is necessary than to use the same simple precautions with these projectiles, as with powder; nothing being requisite but to act at first with circumspection. The commission on this subject stated, in their January’s report, ‘*by a majority of 13 out of 16 voices, that bomb cannon could be adopted on board ships of the line, but in a small quantity.*’ And in their October’s report they declare, *nearly unanimously, ‘that two or four of them could be placed in the lower deck.’*

“But without availing myself of this concession, nor of the methods which might entirely obviate these objections, in regard to danger, let us suppose that it really would be contrary to prudence to admit bomb cannon on board large vessels, and that they can be employed only in the smaller ones, for which they are found so advantageous, what will be the consequence?

“Why the consequence will be, that ships of the line may be destroyed by those weapons which they dare not themselves use; and ships having but few men, and constructed at a small expense, will be seen pursuing ships of war with 800 men on board. It may be replied, that the large vessel will by her size run down those less than herself; but in order to do so, she must overtake them, and while she is doing so, how many shells will be poured into her? And besides, what is to hinder a quick sailing frigate, with bomb cannon, from fighting a large vessel? She would at once be sufficiently active to avoid her vast adversary’s shock, and sufficiently powerful to deal mortal blows.

“The point then is, not merely to ascertain if ships of the line can adopt this new piece; it is whether this will not cause ships of the line to be abandoned. For it is not to arm *them*, that the bomb cannon has been made, it is for their destruc-

tion, and it does destroy them. Is it then any longer necessary to continue constructing vessels so large, so expensive, so difficult to manage, and manned with such large and select crews, when the smallest ship, armed with the new cannon, will have power to sink them, or set them on fire?

“ Perhaps there are some who think that weapons of this description are odious, and ought to be rejected. This sentiment is certainly worthy of respect; but if it be just, ought we to have arms of any description? For what are arms made? and is it not acknowledged, that wars do not become more sanguinary, as military weapons become more destructive?

“ Then it will be said, since this new weapon is admissible, and has so great an effect, was it not your duty to have kept it secret, in order to have introduced it on the occasion of the first new war? Yes! if it did not so happen, that several experiments were required to be tried before succeeding, and if it was not necessary to initiate 200 persons in the preparation and execution of these experiments; or if it were not necessary, before being able to convince all of its advantages, that public and incontestible experiments should frequently be made, to set aside all objections; and this without doubt was the opinion of the government when they gave me permission to make it public. But although it might not be impossible secretly to adopt a new weapon, there are advantages to be gained from giving publicity to this; for if foreigners adopted it, the result in the present state of maritime force, will be such as cannot be otherwise than favourable to France. Hence several important questions present themselves, which I proceed to point out.

“ First, we see that line of battle ships so large, so expensive, employing so many men, and of which one alone is a great portion of a squadron, will give place to vessels less colossal; and when we are exposed to such a piece, it will be far better to place eight hundred men in two or three vessels, than in a single one: ships will be introduced of a more moderate size, requiring a shorter time and less expense to construct; and by being brought earlier into use, they will not require to be constructed of wood, so difficult to be procured, or be so difficult to manœuvre. Lastly, these vessels will be

able to take refuge in a greater number of our ports; thus will they be more favourable for France than ships of the line, which have always been of less advantage to us than to England, because the English, being more rich, and their habits and interests leading them oftener to sea, their experience and riches have always given them superiority over us on that element.

“ Another effect of the adoption of bomb cannon, to break and burn ships speedily, will be the adoption, sooner or later, of iron ships, or ships covered with armour for protection against artillery.

“ It is difficult to resist a cannon shot of 36 lbs. and no slight armour will resist the new piece, which throws with force a ball of 80 lbs. But after all, the thing is possible; and by investigating this important point a little, we may discover what can be effected.

“ As such constructions can only be effected at a high price, they may seem at first view to be more favourable for England than for France; but we shall quickly shew how incomparably more advantageous this new system will be to France than to England.

“ In these iron fortresses, battles will no longer be decided by artillery, or by greater or less skill in manœuvring, and the management of broadsides; they will be decided by man to man in boarding. The results of this will be, that the power of our fleets will increase with that of our armies: this will be an immense change.

“ Steam-vessels are so important an invention, that it would be improper to pass over this new method of navigation, in speaking of the new means of destruction I have proposed. The commission which examined my work of 1819, requested leave to try *‘ the use of steam-vessels combined with bomb cannon. ’*

“ When we have these war steam-vessels, what advantages will they not offer to our navy? We shall navigate without depending on the winds; we shall fight without being exposed to shocks from the falling of masts, which overturn and paralyze every thing: shewing but few sails, we shall not be visible at a distance; and no longer having to counterbalance very high masts by deep keels, we shall pass

every-where with but little water ; we shall be protected by the fire of the coasts, and our vessels will have sixty ports to resort to in lieu of five only. Lastly, and it is a consideration of great moment, steam-vessels may be navigated with very few sailors, while the quantity of rigging in vessels now in use, requires a crowd of men. Here is the grand difficulty France experiences in contending with England : it is not so much the power to construct sufficient vessels that we want ; it is the power to find, in a less maritime population, a sufficient number of experienced seamen.

“ In considering this subject, the following opinions may be formed. The English, (I always cite them, because they are both in peace and war our most formidable rivals,) the English will, like ourselves, have bomb cannon ; but if the bomb cannon destroy the existing marine, we have only 160 vessels to lose, while the English have about 500. The English as well as we will have vessels cased with iron ; but when we have vessels proof against cannon, actions at sea will only be decided sword in hand, and this is a contest in which it will not be easy for any nation to triumph over the French.

“ The English will have excellent steam-vessels, and these perhaps sooner than we shall ; but as this change will make naval experience and habits less useful, will it not tend to the advantage of France much more than to the advantage of England ?

“ Lastly, the English, whatever improvement we may adopt, will always have the superiority in number at sea : they will without doubt have a superior number of good seamen, because they are a seafaring nation ; but we shall have the superior number of good soldiers, and with the proposed marine, this last kind of force will have great influence at sea.

“ What then is to be done, in order to prepare for the establishment of this new system ? The answer is easy, it is this,—enter upon the road now opened, and pursue it with perseverance. Increase the number of experiments, and practically introduce those which have succeeded : regard the inconveniences, if any arise, as obstacles to be conquered, and not as motives for abandoning it altogether. The difficulties which will be met with, will not be so great as those which originally presented themselves to our present admirable con-

structions ; and it is not to be feared that any persons will oppose a system, in which our navy will find the chances of war rendered less unequal, our artillerists more powerful arms ; our engineers a rich harvest for improvement, and the service a great number of considerable advantages.

“ It does not form any part of my plan to exhibit here the applications that may be made of bomb cannon, either in the defence of coasts and forts, or in the attack and defence of fortified places ; but as several of these applications would not perhaps be uninteresting to various officers, I shall point them out succinctly in the notes..

“ I have not spoken of the severities and censures I have experienced, the ordinary tribute which all sorts of inventions have to pay before they are admitted : but I ought to mention, and I acknowledge with the most lively gratitude, that I have found every-where enlightened and equitable judges, judicious and generous fellow-labourers, and the protection of those in authority, together with the approbation of those men, whose good opinions are always ready to be extended to useful works, which are of themselves the most honourable recompense.”

After having thus given the results of the experiments, and the important consequences which appear likely to ensue from them, Lieutenant Colonel Paixans, in 23 paragraphs or notes, details all the technical points and specific expressions which belong to his contrivance, and then treats of divers questions relative to the navy, to the artillery, to the attack and defence of the coasts and places, under the following heads. No. 1. A Note indicating the Propositions contained in a Work entitled, “ *Nouvelle Force Maritime,*” &c. No. 2. Note upon the new Species of Cannon lately submitted to Experiment. No. 3. Report of the Commission charged to examine them. No. 4. Effects produced upon a Vessel of the Line by the Bomb Cannon of 80 lbs. at the first Experiment made at Brest in January 1824. No. 5. Report on the first Experiments at Brest in January 1824, by a Commission composed of the heads of the Navy, of maritime Fortification, and of the Artillery. No. 6. Report made to the Academy of Sciences, and approved by it in May 1824. No. 7. Opinion of the Consultative Naval Committee on the new

Experiments, ordered on a more extensive Scale than the preceding. No. 8. Effects produced on a Ship of the Line by Bombs of 80 lbs. and by hollow Balls of 36 and of 24 lbs. at the second Trials made at Brest in September 1825. No. 9. Report on the second Experiments at Brest, by a Commission composed of the heads of the Marine, of maritime Fortification, and of the Artillery. No. 10. Note on the State in which the Vessel used as a Butt was found after the Experiments. No. 11. Experiments made at Brest in October 1824, upon the range of Bomb Cannon of 80 lbs. compared with the Cannon used by the Navy, and upon the Range of solid Projectiles, compared with that of hollow Projectiles. No. 12. Observations on the Model of Bomb Cannon tried at Brest, on their Solidity, on their Facility in Manœuvring, their Charge, their Effect, and their Recoil. No. 13. Observations on the Accuracy of the horizontal Fire of Shells, on their entering the Sides of a Vessel, the Certainty of their Explosion, and their increasing Power. No. 14. Answers to Objections. No. 15. Observations on the Vents of Bomb Cannon, and generally on the Vents of Cannon proposed for the Navy. No. 16. Observations on the Danger to which Vessels will be exposed by making use of Shells, and to what Danger from the Enemy. No. 17. The Influence which the horizontal Firing of Shells will have, by necessarily causing large Vessels to be abandoned. No. 18. Question of having a lighter Cannon than that tried at Brest for small Vessels, and what would be the proper horizontal Range of Shells. No. 19. Question of having Vessels made Proof against Artillery, and Vessels constructed entirely of Iron. No. 20. Question concerning Steam Vessels for the Navy. No. 21. Question on the Defence and Attack of the Coasts and Ports by means of Bomb Cannon, in ordinary Batteries, Floating Batteries, Gunboats, &c. No. 22. Question on the Application of Bomb Cannon in the Attack and Defence of Places. No. 23. Reply to some Censures.

. We hope soon to give our readers some account of the English "Bomb Cannon," or 8 and 10 Inch Iron Howitzers, with Gower Chambers, one of which has been sent out to each of our Indian presidencies; but we have not time now to speak of these superb pieces.—
EDITOR.

ARTICLE XI.
TRANSLATION

FROM

THE BULLETIN DES SCIENCES MILITAIRES

FOR MARCH 1825,

Containing Remarks drawn forth by a Treatise on hollow Projectiles, by Montgery, is offered to our readers, with a view to exhibit the notions entertained by the French on this and other military subjects with which it is connected.

1. We labour under a delusion if we suppose, that the introduction of hollow projectiles into our navy will prove a master stroke of policy for France ; the manufacture of these projectiles, both in Great Britain and the United States, being already carried to a degree of perfection, from which the French are still very far removed.

2. While the Americans are busily engaged in attempting to render their wooden walls impenetrable to all projectiles, and in trying to construct machines, arms, and vessels upon entirely new principles, the English, in their endeavours to surpass such active rivals, certainly follow their steps more closely than we do, and the present progress of naval art only serves to shew the inferiority of the French. But this art itself seems about to undergo a revolution, which promises to present such formidable means against the nation that may hereafter attempt to exercise maritime command, that those now the most weak, may soon become the most powerful.

3. Both facts and theory have for a long time shewn, that bombs, shells, and hollow balls, are well calculated to destroy such masses of wood as ships ; and it has frequently been proposed, in France, and sometimes even in England, to employ in naval actions, nothing but these projectiles. Thrust back and opposed, however, till now, by the government of these two countries respectively, this project has only lately obtained their attention, and has given rise to new experiments. The Congress of the United States, immediately after concluding the last treaty of peace with Great Britain, accordingly set aside a considerable sum of money for the manufacture of a description of shells proposed for the use of

their navy by a Mr. Stevens ; a trial of which was made upon Governor's Island, in the bay of New York.

4. When we look to these matters on the new continent, and contrast them with those in the old world, we are led to observe, that although military, maritime, and other inventions, are abundant in France, yet their practical adoption is very much neglected ; while although theories and experiments of every kind are more rare in America, useful ideas are there practically seized upon, as soon as they present themselves. England, richer again in science than the United States, though less so than France, holds, in the practical application of science, a sort of medium between French inertness and American activity.

5. Mr. Stevens died a short time after his shells had been adopted in America, and the manufacture of them was in consequence entrusted to his son, whose establishment is situated a short distance from New York, on the banks of the Hudson : a few confidential workmen, after putting a finishing hand to these shells, enclose them in sealed boxes, which are sent to the several arsenals of the Union. The batteries on the coast, and the fleets will be provided with them in time of war, and the American government evidently expect the most advantageous results, from an invention which, they in vain believe, will be kept secret for a length of time.

6. During my residence in the United States, I could have procured all the details connected with Stevens' shells, if I had only asked for them. But wishing to be at liberty to publish all I might learn, I refrained from collecting information from many who had been present at the experiments with these projectiles, several of whom probably possessed only superficial notions on artillery ; while others might have wished to conceal from me the truth.

7. Stevens' shells are oval, which allows of their possessing great capacity, without proportionally increasing the calibre of their piece. At a distance of two or three hundred paces, or even more, the flight of these projectiles is not less correct than ordinary balls. The butt against which the experiment was made was an old ship, the sides of which were rendered as thick as those of a first rate ; and each explosion caused rents greater than any ship could possibly

receive on the water line, without almost immediately sinking*.

8. It is true, that very formidable explosions may be effected with ordinary bombs and shells, by causing them to burst in the side of a ship, or in any timberwork of a similar nature; but in consequence of the inefficient mode in which these projectiles are commonly prepared the explosion sometimes takes place in the air, after having passed the mark; frequently in the bore of the cannon; the fuze often breaks, falls out, shifts from its place, or does not set fire to the bursting charge of powder†.

9. Yet when we fire against a ship, it is very important that each projectile should burst in its sides; for this is the most certain means of tearing its timberwork, of setting fire to, and of destroying its tackle, by splintering both wood and iron, as well as of opening towards its water line, gaps sufficiently large to cause it suddenly to sink. All this appears attainable by employing Stevens' shells, which always explode

* By referring to page 194 of the 7th No. of the Repository, our readers will find the sentiments of the Bengal Artillery Select Committee, on Dr. Hough's ingenious cylindrical shells.—ED.

Colonel Morrison and Major Cullen, of the Madras Artillery, acting like Dr. Hough, we believe, on Hutton's suggestions, long ago proposed, the former oval, and the latter cylindrical case shot, with hemispheric ends, their cylindrical part being from one half to one third the diameter of the shot's calibre in length, and the shells half an inch thick in metal. These were tried by General Millar of the Royal Artillery, and found to answer well.

Vide Douglas on Naval Gunnery, page 61, et seq. for observations on oval or cylindrical shot.

We regret that neither the Artillery Select Committee, nor the Military Board in Bengal, should have deemed the investigation of sufficient importance to induce the expense of a course of experiments with cylindrical shells, formed after Dr. Hough's suggestions, but made thicker in metal, which seems to have been the only objection against Dr. Hough's shells.—ED.

† Fuzes are liable to these, and many other accidents, for which no allowance is generally made by persons not artillerists; and we dare say some few of the many non-military officers, who lately attended the siege of Bhurtpoor as a matter of amusement, as well as military non-artillerists, did not make very full allowance for all these matters, in their criticisms.—ED.

when they encounter a solid body after being discharged from the piece*, and possess this advantage, that they may be left for months together under water without being damaged, and may be passed through a strong fire without any danger.

10. By removing the fuze, and using fulminating powder, it is easy to give to ordinary hollow projectiles all the properties of Stevens' shells; although, according to the description given to me, these shells have a fuze. The following is the manner in which I suppose them made†.

11. The fuze is made of metal, and screws into the fuze hole, and is covered with a small plate of copper, fastened by a groove or screw, adjusted so well, that neither water nor fire can communicate with the fuze composition so long as this plate is not removed; and it is not taken off till the instant before the shell is put into the piece. Two tubes form the body of the fuze, cut at their junction like a whistle, being slightly soldered together with tin. The tube which forms the lower part of the fuze is closed at bottom; consequently so long as the two tubes remain joined the one to the other, the composition can burn out, without setting fire to the bursting powder in the shell.

Let us now suppose that the shell, after being uncovered, is introduced into the piece: as soon as the shell is fired off, the flame is communicated to the fuze composition, and the solder, which is close to the neck of the fuze, is melted almost immediately. A violent jerk necessarily takes place when the shell strikes a solid body, by which the two tubes of the fuze are separated, and sparks are thus spurted from them into the midst of the bursting charge, and the projectile being now stuck fast in the mark, if it be of wood, a severe explosion is obtained, highly destructive to the vessel.

13. Experiments have been recently made in England, with another kind of hollow projectile. The Edinburgh

* Montgomery does not seem to have met with the fuze described by Captain Parlbby, when editor of this work. Vide Article 3d. of the 3d. No. of the British Indian Repository.—ED.

† Dr. Hough proposed a percussion fuze being attached to what he termed his "mine shot;" and in order to prevent accident, the percussion drift, or hammer, was made to screw into the body of the fuze, the moment before the shot was to be used.

Journal, the Courier, the Star, and several other papers gave the particulars of the trial, which took place at Leith Fort, on the 21th of September 1823.

14. Spiral rays placed on the surface of these projectiles, give them a rotatory motion round the line of fire, and prevent any deviation to the right or left; and percussion against their object causes them to explode, without the help of a fuze. Calibres of 9 or 10 lbs. avoirdupoise only have hitherto been tried. The different marks at which they were fired, were made of oak, varying in thickness from 4 to 24 inches; but the bursting of the shell invariably took place the moment the marks were struck, and the splinters of wood and iron were carried in showers of grape beyond the obstacle fired at. It has also been found, that a shell fired at a distance of twelve hundred paces against a stone wall, although previously glancing on the surface of water, does not burst till it strikes the wall. It is proposed to arm vessels and batteries on the coast with these new projectiles, and to place them in the ditches of fortifications threatened with assault, so that they may burst when trodden under foot by the enemy.

15. The new shells are manufactured by the celebrated Carron Company, who perhaps propose, like the Americans, to keep secret their method of causing hollow projectiles to burst.

16. Two modes capable of producing a similar effect, have been described in a work written as a continuation of the *Victoires et Conquetes des Français*, which we literally transcribe.

“*Sulphuric tubes.*—In a capillary glass tube, the thickness of a straw, some drops of sulphuric acid are introduced, and it is then hermetically sealed, (the glass-blowers who make thermometers can prepare a quantity of them in a day.) This tube is covered with thin blotting paper, previously saturated in a strong solution of oxymuriate of potash, which is rolled round, and glued on the tube. The form of the tube may be varied, and a small glass bowl may be blown at the end of it, by which means the tube will be easier broken. Ignition takes place immediately the sulphuric acid touches the oxymuriated match. This match is excellent for making the enemy themselves fire mines, or fougasses, because they must necessarily break the tubes when they tread on them.

They have been tried successfully by Mr. Lespagnol, a captain of artillery, who has employed them in defending places. These matches cannot without danger be transported in artillery carriages in their complete state; but the tubes may be placed in separate boxes filled with bran, or powdered stone, and the match in other boxes; the paper match may be wrapped round the tubes in a moment.

“*Percussion shells.*—These shells are formed of two hemispheres, having a ring of thin leather, or felt, between them, which renders the shock which the discharge of the piece gives to the shell merely a strong pressure. A sufficient charge of fulminating powder is placed in the shell, and as soon as the projectile strikes against a mass of wood, earth, brick, or stone, it bursts like the common shell. It might be very useful in the attack of redoubts and land fortifications; but the Artillery Committee has not had an opportunity of making trial of it.”

17. M. D'Arcet, an ingenious chemist, and member of the Institute, whose name is connected with nearly all the arts useful to his country, has communicated to me the following description of a shell, which he saw tried. The cavity of these projectiles was eccentric, and the fuze hole pierced at the thickest part of the metal: each shell was filled with cannon powder, and fulminating powder was afterwards put into a slight hollow groove round about the fuze hole; parchment was then glued over this priming. The fuze hole of this shell always flew foremost when traversing the air, in consequence of the thickness of the metal in that part*; and on its striking against a hard substance, it bursts.”

18. A moment's reflection is sufficient to convince one, that these three kinds of projectiles are replete with danger, if employed for other purposes besides producing explosion in the ditches of fortifications. I am unacquainted with the new

* The friction which necessarily takes place, between the lower part of the bore and the projectile, gives any *spherical* projectile a rotatory motion round its axis, however eccentric its cavity, or unequally loaded with metal in its parts, which would prevent the fuze hole flying always foremost. This may not be the case with *cylindrical* projectiles.—ED.

process adopted by the Carron Company, but the following is what I propose.

19. In the fuze hole of the shell or bomb, a piece of iron should be screwed, the extremity of which should be level with the exterior surface of the projectile, to the other extremity, resting in the midst of the bursting powder: a small cylindrical iron box should be screwed, having several little holes at bottom, covered over, first with some light stuff, and afterwards with unground fulminating powder; an iron ball should be enclosed along with this powder, the play of which, as well as the strength of the detonating composition, should be so calculated, that only very severe shocks could cause explosion. There would then be no cause of apprehension from the slight blows which these projectiles might accidentally meet with; and thus arranged, they would possess all the advantages of Stevens' shells; they would never go off but when discharged at a mark, and would pass through fire without damage; besides, they would not require a cap to be taken off, and as the fuze hole would be solidly stopped up, the explosion of these shells would be somewhat more violent than others.

20. All bombs, shells, and other hollow projectiles are capable of receiving a percussion box, even if the metal were of too bad a quality to admit of a screw being bored. In this case, large notches should be made about the fuze hole of the projectile, and afterwards filled up with a composition, which acquires a tenacity and firmness equal to metal.

21. The process now proposed would not require a general recasting: but all new hollow projectiles should in the first place be made oval; 2dly, Thicker than ordinary, particularly at the part intended to strike first against an object. 3dly, Channels spirally shaped should be cast on their surface. 4thly, Their weight should be regulated, in such a manner, as to equal as nearly as possible, that of a solid ball of the same calibre. By these means, and without changing any thing in ordinary guns and carronades, large shells might be

* Dr. Hough's proposition of a percussion fuze was more simple and ingenious, but on the same principles, we believe, as this. He proposed cork, for the "light stuff."—ED.

obtained, which would produce greater ranges than any hollow projectile that has yet been tried from these pieces. The channels should be made so as to damage the bores of the piece as little as possible; and with this view, the new projectiles should be wrapped up in coarse cloth, the channels being previously filled with tow. Lastly, the gunpowder contained in these projectiles, should be mixed with fulminating mercury, or with chlorate of potash, the same as that used for percussion primings and tubes. Although much stronger than ordinary gunpowder, these compositions will not explode from the blow of a hammer when placed on wood; to produce explosion, it is necessary that the blow should proceed from iron against iron.

22. The use of fulminating powder, as artillerists are aware, has been more frequently proposed for loading cannon than for bursting hollow projectiles; but this proposition is directly opposed to theory, for cannon and their carriages are already exposed to too many accidents from the strength of common gunpowder, the ranges of which are already too extensive to allow of precision, even with ordinary projectiles: it is therefore ridiculous to wish to load cannon, howitzers, and carrouades, with fulminating powder; besides, if any fulminating powder should accidentally be spilt along the bore, the charge of the piece might be ignited in the very act of loading.

23. But none of these inconveniences are to be dreaded from filling a bomb or shell with fulminating powder; the concussions to which such projectiles are exposed, before striking the object, not being violent enough to cause an explosion; and there is nothing safer than the coat of a hollow projectile for powder of this description*. The high price, and danger attending the manufacturing of fulminating powder seem the only objections that can be justly urged against their adoption.

24. Fulminating mercury, and chlorate of potash, are triturated with a muller, a glass pestle, and a wooden or bone knife. Ground separately first, they are then amalgamated

* We regret Montgery does not here state whether he speaks from practical experience.—ED.

with gunpowder unground. These are kept moist: care must be taken to work them gently, and not to mix too much at a time. In addition to these precautions, it has lately been proposed to put a metallic conductor (in order to carry off the electric fluid) at the bottom of the wooden cup used for mixing. By this precaution, added to those already in use in gunpowder manufactories, it is thought little danger will be incurred. It is also possible to *pulverize*, amalgamate, and grind these materials, by means of machines, which alone would be exposed to be blown up. Lastly, we may remark, that the process of baking, or glooming powder, which has not yet been tried for the amalgamation of fulminating salts, is at once the cheapest and the least dangerous method. Isolated pots, of small dimensions, after having received the ingredients, and a sufficient quantity of water, should be hermetically sealed, and heated by steam. A sort of alarm, very easy to arrange, might give notice when the ebullition had attained the prescribed heat; the pots might then be allowed to cool, and the composition be afterwards placed upon tables in the open air, to dry, or in some stove.

25. The price of fulminating powder, although diminishing every day, is still much higher than common powder; but if it be allowed that the new powder is only three times stronger than the old, it is evident, that much greater explosions would be obtained from projectiles, in proportion to their calibre, than at present, and at much less expense. The essential point is, to possess projectiles, every round from which should be decisive: these are really more economical than our ordinary hollow projectiles, and above all, than solid balls, cross bar, and case shot; for a vessel may receive a vast quantity of these last, without being disabled.

26. Any attempt to decide definitively upon the perfection of the subjects of which a mere outline has here been submitted, would however be misplaced; nor is it here that all objections could be answered, or a proper treatise be given; other objects claim our attention. We have already examined some of the properties of foreign shells; let us now proceed to the experiments made at Brest.

27. The most essential point of difference between the projectiles proposed by M. Paixans, and the ordinary hol-

low projectiles, is a second hole, pierced near to the fuze hole of the shell, by which to introduce the bursting powder, after the fuze is fixed. The mouth of this second hole is afterwards stopped up by a short wooden pin, in the shape of a truncated cone.

28. The object of this second hole, according to the inventor, is to avoid all danger in fixing the fuze; a matter which, up to this time, has not been considered of the least consequence by any of the principal corps of artillery in modern Europe.

29. But does this new hole offer no inconvenience, or no real danger? Might not the wooden pin get dry, split, be displaced; and might it not happen, that in discharging the shell, the fire might through it communicate with the bursting charge of the projectile, and thus cause a double explosion inside the piece? The use of wooden fuzes sometimes occasions this sort of accident; and the pin, being much shorter, and more conical than a fuze, would on that account occasion greater apprehension. Besides, two holes in a shell are disadvantageous; for the escape of the elastic fluid is thus greatly facilitated, and its effect consequently diminished.

30. The explosion of M. Paixans' projectiles is rendered still weaker, because he takes away a portion of the charge of powder, and in its place substitutes combustible compositions and smoke balls. This officer seems unaware, that smoke easily dissipates from on board a ship under sail, or even at anchor, the numerous hatchways, port-holes, &c. affording it ample means of escape: as to incendiary compositions, a well disciplined crew will succeed in extinguishing them; but there is no remedy against sudden openings made in the sides of a ship, nor against the splinters which these at the same time occasion. The more the effects of explosions extend, the greater is the chance of opening the plank, and causing the enemy almost instantly to sink. Besides, quantities of powder thus taking fire near the enemy's ordnance, may inflame and explode their cartridges, grenades, &c. Lastly, it must be observed, that M. Paixans has not even been able to give a good recipe for incendiary composition, and that the compositions for smoke balls which he points out as the best, are on the contrary the most common, and the least powerful.

31. All proposed by this officer in the new projectile tried at Brest, would seem only therefore to exhibit a retrograde in the art. But if we call to mind, that the English howitzer of six and nine pounds, is capable of staying oak two feet thick, which is more than the mean thickness of the sides of a first rate, it appears that M. Paixans' shells, which are of calibres from 80 to 150, and 200 pounds, would, notwithstanding his errors, produce very great effects. The public perhaps have heard, that an old ship was sunk by them at the first round, and this will no doubt excite admiration, in persons who are unaware of results equally brilliant having been obtained, with projectiles much smaller, more economical, and infinitely less incommodious for naval use.

32. The example set by the three principal maritime powers will necessarily, however, be followed by all others; and although hollow projectiles may acquire in the navy some repute, this will certainly prove only temporary. It will soon be discovered, that they can produce no decisive effect on ships protected by iron or steel, and against ships whose sides are composed entirely of metal. In order to obtain any great advantage with these projectiles, they should have been used unawares, as the Americans intended. I have insisted on this view of them in several memorials addressed to the French government; but seeing that we are now outstript by other nations, I have attempted publicly to shew, that the relative importance of hollow projectiles is proportionate to the advancement of naval art. We may rest assured, that the progression of each depends the one upon the other; and that every inventor, or pretender to invention, who endeavours to separate them, does so at the expense of science, and often has only his own private interests in view. Government require to entertain extended and generous notions, without which all the expense incurred in arming flotillas, all the care bestowed in order to bring details to perfection, may turn to their disadvantage. Never was it more essential than at the present moment, to look at this question in an elevated point of view, and to examine it in all its parts. Steam-vessels, hollow projectiles, vessels constructed entirely of metal, covered with metal, submarine vessels, submarine arms, and a thousand other secondary inventions, discovered first in Europe, brought

to perfection in America, are now returning again to us, and are gradually about to be introduced into all navies, thereby opening the way for still greater, and more wonderful inventions.

33. Whoever reflects upon these changes, will perhaps ask with some inquietude, where all this will end ? We dare assert, that the results will be as important as the changes brought about in the 14th and 15th centuries by the discovery of the mariner's compass, gunpowder, printing, and the new world. Some nations and individuals will probably be severely punished for their ignorance or prejudice; but great advantages seem reserved for that portion of mankind, who prove themselves the most active, and the most enlightened.

ARTICLE XII.
 THE FOLLOWING TRANSLATION
 OF
A R E V I E W,
 WHICH APPEARED IN
THE BULLETIN DES SCIENCES MILITAIRES,
 FOR MARCH, 1825,

On an "Elementary Treatise on Artillery, adapted to the Use of military Men of every Description, by E. Decker, translated from the German into French, with Notes by J. Ravichio and A. P. F. Nancy, 1 vol. 8vo." is presented to our readers, in the hope of recommending to their perusal, a work which seems to contain considerable information relative to the Artillery of the chief European States.

WE do not possess, in any language, 'a complete elementary treatise on artillery, such as can convey to officers of infantry, cavalry, and on the staff, just ideas of the importance of that arm, or which could lead them, either to appreciate its proper value, or to attain that acquaintance with it, so frequently requisite both in field and siege warfare.

2. Captain Decker, first Professor of the Academy for Artillery and Fortification at Berlin, has undertaken to fill up this vacancy in our military libraries; and the high reputation which his publication in 1816 attained, has induced Messrs. Ravichio and Nancy to present us with this translation of it.

3. The treatise, which in the German edition forms three volumes, is in the translation comprised in one; notwithstanding the translators have added notes, both with a view to convey a more complete knowledge of the French artillery material, and to correct and complete the text of the original, wherever that seemed necessary.

4. The best method of submitting to our readers, full information on a work of this nature, being to offer a sort of table of its contents, we proceed to detail the objects treated of in the three several books from which the translation is compiled. This sort of analysis will shew, that the divisions of the subject adopted by the author (to which the translators

have scrupulously adhered) are at once the most natural and methodical, and consequently the best he could have pursued.

5. The first book comprises all that relates to the material of artillery, and is divided into six chapters.

6. The 1st chapter treats of gunpowder, of its component parts, and the relative proportions of its ingredients, its proof, preservation, and of the theory of its ignition. But all these being subjects of distinct interest, not requiring to be very deeply entered into by officers of artillery, they have been treated rather in a summary manner: the translators, confining themselves to the existing state of our practical knowledge in regard to the materials of which powder is composed, have referred to the scientific works recently published on these subjects for technical details.

7. The 2d chapter comprises seven sections, the first of which is occupied with the forms, dimensions, and mode of manufacturing cannon, also their examination and proof before being received into the service. The translators have here confined themselves to the principal dimensions of French ordnance, in addition to the text of the original; and in the present state of things, they could have done no more; all that relates to this important branch of our artillery material being just now under consideration by a committee, embodied at the end of the year 1821, by his Excellency the Minister of War*. The three last sections of this chapter treat of the forms and dimensions of artillery carriages, of their constructions, and of the wood and iron used in the arsenals. This subject is of so much importance, that the author should, in our opinion, have devoted a complete chapter to it. A committee having, however, been lately assembled to examine and

* This committee has divided its labour into four sections, which treat, First, of the different binary, ternary, and quaternary alloys of all the known metals easy to be met with, at a low price. Secondly, of the form and dimensions of every sort of cannon established by experiment, up to the present date; and of all that are used, either in France or among the principal nations of Europe. Thirdly, the means of manufacture best adapted to give the best cast at the least expense. Fourthly, of the examinations and proof proper to be used to ascertain the quality of cannon, without being pushed so far as those of the present day, or to form a primary cause of their destruction.

report upon all the various sorts of beds and carriages which have either been used, or have only been tried or proposed, up to the present date, as well in other countries as in France, great improvement may now be looked for in this interesting part of our material. In the mean time, the translators have endeavoured to point out the general principles which should be followed in constructing beds and carriages; they have given a summary description of the field, gun, and ammunition carriages used in England, with a sketch of the advantages of the principles upon which they have been constructed, after a plan first tried in Germany in 1792, and which has been submitted to five of our schools. They have described the French coast and garrison carriages, which the authors had neglected to mention; and lastly, they have given details which we consider very useful, upon the qualities and defects of the several kinds of wood and iron, and upon the various uses to which they may be turned in our arsenals.

8. The 3d chapter treats of levers, pullies, cordage, and simple machines used in manœuvring artillery. The translators have here merely added the dimensions, weight, and particular uses of the various ropes employed in the French artillery, to the original text.

9. The 4th chapter treats of the preservation of ammunition and other munitions of war. The translators have here merely given (in notes) the dimensions of the French projectiles, and the proportions of compositions used in the French laboratories and have referred to the "*Pyrotechnie Militaire*," published some months since by Colonel Ravichio, for their preparation.

10. The 5th chapter, entitled *Miscellanea*, explains the methods used for firing red hot balls, the mode of firing cannon so as render those about to be abandoned to the enemy unserviceable; for repairing those that are damaged; for destroying bridges, and breaking up pontoons: the subject of petards, vent-bouches, &c. are also discussed in a summary manner.

11. In the 6th chapter, all theoretical and practical knowledge acquired up to this time, upon the firing of cannon, and portable firearms is resumed. The translators have added

only a few short notes to these two last chapters, merely giving particular details relative to the French artillery, or in refutation of some of the author's assertions.

12. Reviewing thus the first book, we find that it embraces all relating to artillery, in the gunpowder manufactories, the founderies, arsenals, forges, and laboratories, besides giving the principles for directing the fire of all arms. It is preceded by an introduction, in which is given the history of the progress of artillery, from the first invention of powder up to the present date; and thus is terminated by a table of the specific gravities of the principal substances required in artillery.

13. The 2d book, comprized in three chapters, treats of the employment of artillery in the field.

14. The 1st chapter details the calibres most convenient for use in the field; the formation of their equipment; the partition of cannon into batteries of division, and batteries of reserve; the arms and equipment most convenient for artillery troops, the harness of the horses, the supplies, armament, and assortment of pieces and carriages; their teams, forage, &c.

15. In the second chapter are exhibited the advantages and conveniences of foot artillery, of horse artillery, and of that where the servers of the piece are conveyed upon carriages. The proportions that ought to exist, both between the different sorts of artillery, and between artillery and other troops of which armies are composed, are also here laid down.

16. The third chapter may be regarded as a treatise on field artillery tactics: we are here informed of all the dispositions proper to be taken up, of all the movements to be made by foot and by horse artillery, whether on the march, or on the field of battle, for attack or defence, as well in the open field as in close intrenchments, and in mountainous countries.

17. The second book recapitulates the works of Antoni, Dupuget, Marta, and of all the best writers treating on the use of artillery in the field; it furnishes the necessary documents for answering the tenth question of the series published in

the 232d Number of our Bulletin*. M. Decker has here cited in support of his principles, occurrences taken from the history of the last war; and the translators have added others, furnished by their own experience, or from that of friends, whom they have consulted upon the subject; they have quoted some to demonstrate the differences existing between the personal and material of the French and Prussian artillery; and lastly, they have occasionally found themselves obliged to correct the assertions of the author, where he has appeared deficient in accuracy.

18. The third book treats of the use of artillery in the defence and attack of places. It is composed of two parts, of which the first is occupied with the defence of places, and is subdivided into three chapters.

19. The first chapter acquaints us with the number, the description, and the calibre of cannon proper for the arming of places, the personal of the artillery indispensable for the different services of this arm, and the stores and necessary supplies, &c.

20. The second chapter treats on the employment of artillery in the defence of places against a regular attack, from the period of investing, up to the reduction of the place.

21. The third chapter exhibits the powers of artillery in repelling a storming party, or in defending a place temporarily fortified; the precautions to be used to prevent surprises; and lastly, the measures to be taken when the enemy raises the siege.

22. The second part of the third book treats of the employment of artillery in the attack of places; it comprizes six chapters.

23. The first chapter relates to the formation of the equipment for siege, both in regard to the personal and material; also to the transport of the equipment by land and water, and to the precautions to be taken for its security during the progress of a siege.

24. The second chapter informs us of the different kinds of batteries made use of in sieges, their forms, the number of

* Vide page 204. No. VII. of the British Indian Repository.

workmen, and quantity of materials necessary for their construction; the progress of the work, whether upon favourable or unfavourable ground, &c.

25. The third chapter treats on the employment of artillery in a regular siege. Here we follow the progress of attack, from the period of reconnoitring and investing a place, to its capture or surrender. Interesting details are here given upon the protection which artillery is capable of affording to the different operations of a siege, and among others, to the crowning of the covered-way, to the passage of the ditch, and to the assault; here the rules to be followed in firing guns of different batteries, and the precautions to be taken against sorties are laid down. Captain Nancy informs us, in a note on this subject, of a mode devised by the Spanish General Navarro, for charging cannon by the breech, which among other advantages, would permit pieces to be abandoned to the enemy, without apprehension of their being of any use.

26. The fourth chapter details the uses which may be made of artillery in attacks by storm, according to the different circumstances causing this rapid, but uncertain mode, to be preferred to the slower, but surer operations of a regular siege.

27. In the fifth chapter, under the head of "Different Objects connected with Artillery for a Siege," will be found details on the destruction of trenches, of batteries, of guns, and their carriages, upon repairing revetments,—the demolition of places not intended to be retained,—on opening embrasures under the fire of an enemy,—upon masked batteries, &c.

28. Lastly, the sixth and concluding chapter details the duties of officers of artillery after the taking of a place, or upon the raising of a siege. Here will be found useful advice on the conduct to be observed during a suspension of arms, at the time of taking possession of a place, or at the time of evacuating it, &c.

29. In the third book, as in the preceding, precepts drawn from the most esteemed and modern authors, are corroborated by examples; and the translators have endeavoured in their notes to complete or to correct the positions of the author, wherever that has appeared necessary; so that this part of their work answers completely to the 20th of the

questions proposed in the series already cited of No. 232 of the Bulletin*.

30. This detailed review will doubtless be sufficient to enable our readers to appreciate both the number and importance of the subjects comprized in this work, as well as the order in which they are presented; and in regard to the manner in which they have been treated, we know it has received the approbation of the celebrated author of the *Aide Memoire*, and of the officers of the French Royal Corps of Artillery: and to shew that the work is well worthy of confidence, we shall here mention the services of the author, and translators.

31. M. Decker has been a long time an officer of artillery. During the war, he was a captain in that corps, and having been subsequently appointed to the staff, he is well capable of judging of the particular character which a work of this kind should present, with a view to offer to military men, of every arm, and particularly to the staff, sufficient information on artillery, without harassing them with difficulties ill calculated to lead them to the study of it.

32. Colonel Ravichio, who served from 1781 to 1799 in a highly distinguished manner, in the King of Sardinia's artillery, and in the Austrian artillery from 1799 to 1811, was called at that epoch into the French service, as a Piedmontese, by the decree which interdicted foreign service to all military men of the countries united to France. Placed on half pay in 1815, he has continued since to make himself useful to his old corps, either by translating from the German and Italian languages, or in forming records on artillery and engineering, for the minister of war, by whom he has been employed since 1817.

33. M. Nancy, who is now employed in the artillery department of the minister of war, is a distinguished pupil of the Polytechnic School. He has been engaged in several campaigns as a captain on the staff of the artillery, particularly in the Russian campaign of 1812. He has commanded for a length of time a company of artificers, and directed the construction of the arsenal at Metz.

* Vide page 207. No. VII. of the British Indian Repository.

34. These two translators, by adding their own knowledge and experience to those of the author, have not failed to render his work more valuable; and we do not hesitate to affirm, that this elementary treatise on artillery may be consulted with advantage, even by the officers of artillery themselves, and be regarded as indispensably necessary to officers of infantry, cavalry, and above all to officers on the staff. They will here find all the information necessary to prevent their feeling embarrassed in forming their reports on the numerous points of service existing between artillery and other arms, which constantly occur, both in the field, and in the attack and defence of places

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ARTICLE XIII.

THE FOLLOWING ARTICLE IS TRANSLATED

FROM

THE BULLETIN DES SCIENCES MILITAIRES

FOR MAY 1825.

WE believe our readers will not feel uninterested in the discussions now agitating the military in Germany on the subject of horse artillery. The questions in debate turn on two principal points. 1st. What sort of piece is most proper to be given to horse artillery? 2dly. Would it not be advantageous to make use of a particular kind of piece, entirely distinct from that of the foot artillery? The pamphlets which have come to hand on this subject are, "*Ueber die reitende Artillerie, was sie ist, seyn sollte und seyn könnte.*" On what horse artillery is, ought to be, and can be made. Leipsic 1818. The author, who is serving in the horse artillery, declares himself strongly for a separation. He conceives that the science required in the foot artillery becomes useless, and even hurtful in the horse artillery, in so far as it takes up time, which should be dedicated to acquiring practical knowledge. He is anxious to have 6-pounders weighing only 140 lbs. to each lb. of ball*. The pieces cannot be too light, because celerity should be the essential character of this arm. The author is led by this diminution of weight, to adopt the English beam carriages, which are much easier to manœuvre than those with double checks. The author also proscribes howitzers, and pretends that those who wish them to be used by horse artillery, have no idea of the proper method of employing this weapon†. He proposes also to suppress the elevating screw, and wishes to have coins only‡.

* The English and Bengal 6-pounder weighs only 100 lbs. to each lb. of the ball.—Ed.

† The Madras horse artillery is, we believe, the only British horse artillery without howitzers.—Ed.

‡ We cannot understand the grounds of this preference of coins to elevating screws.—Ed.

2. "*System der reitenden Artillerie.*" System of Horse Artillery. Leipsic 1823. This pamphlet agrees entirely with the opinions expressed in the preceding. The author proposes the 6-pounder and the English carriage, with the exception of shafts, for which he would substitute the pole*.

3. "*Betrachtungen über das System der reitenden Artillerie.*" Considerations on the System of Horse Artillery. Berlin 1823. A criticism on the preceding work, in which the author objects to the proposed carriages, on the ground that a single blow would render them unserviceable, while the carriages with two cheeks are less exposed to this sudden and total destruction. He opposes the English 6-pounder, to which he attributes but small power. In 1815, Wellington required and got the committee at Woolwich to substitute 9-prs. for the 6-prs. of his horse artillery, in order to compete with the French artillery on the plains of the Netherlands.

* The pole obtains with the Madras and Bengal horse artillery. The shafts are, on the contrary, used by the English Royal Artillery, and by the horse artillery at Bombay. We prefer shafts to poles, for horse draft in the English Royal pattern carriages.—Ed

ARTICLE XIV. ON ROCKETS.

In offering to our readers a translation of an article "On Rockets" from the "Bulletin des Sciences Militaires" for April 1825, headed "Zeitschrift für Kunst Wissensch: und Gesch des Kriegs," we are glad to state, that Captain S. Parlby, Agent for gunpowder at Allahabad, has been employed by the Supreme Government to construct war rockets for our armies in India, subject of course to the approbation of the Court of Directors. We are likely, therefore, to be no longer dependant on Europe, for a weapon, the composition of which, like fuze and other compositions, is no doubt seriously affected by the changes of atmosphere, incident to the arid dryness of our hot winds, and the extreme moisture of our rains.

In noticing this, we must, in justice to Sir William Congreve, remark, that while the composition of many of his rockets has deteriorated, others are stated to have retained their strength of composition remarkably well in India. Of those tried in the Burmese war, we are informed, few have proved bad, with the exception of those fired at Donabew. Yet all the Congreve rockets at Meerut, sent out, we are told, from England at the same time with those used in Ava, (but which had been longer subjected to the trying climate of our Upper Provinces,) have lately been condemned as unserviceable, in consequence of the badness of their composition.

However well Sir William Congreve's composition might therefore have occasionally withstood an Indian climate, it is evident that, like all other laboratory compositions, it requires to be frequently renewed: and that this operation should be effected in India, and not in Europe, is very evident; for our Indian army cannot be too independent of the mother country, in regard to supplies of all the munitions of war. Indeed, whether this question of our military supplies is viewed as one of state policy or of economy, the advantage of commanding military resources in India, and only applying to Europe for those unable to be obtained in Asia, is too manifest to be denied.

While it is with feelings of satisfaction we remark, that the Bengal artillery has produced so able a competitor as Captain Parlbby, in an art which Colonel Congreve has long pursued almost without a rival among his countrymen, we may observe, that a spirit of enquiry seems now active on the continents, both of Europe and America, which promises to lay open the pretended secret of the Congreve and other rocket compositions, and is likely to cause the true merits of rockets, as an excellent subsidiary aid to artillery, to be universally acknowledged; and to occasion their general adoption as such, in all armies organized according to the modern principles of war. The following are the observations contained in the "Bulletin" above referred to.—

"The use of the rocket, as a war weapon in Europe, is at present too recent to enable scientific men to decide on the advantages that may be drawn from it. We ought to examine maturely and without prejudice an arm which is in some measure new, and the adoption of which would carry with it important changes in the material of war. It is our duty to collect facts, and to try all methods to improve, before we absolutely reject it.

"We know that the use of rockets in India is of a very ancient date. Mr. McCulloch, a man of distinguished learning, thinks that the Greek fire was nothing but a sort of rocket*: (the Arabs may have obtained a knowledge of the composition during their excursions into India.) He cites in support of his opinion, a Latin passage taken from the celebrated manuscript of Marcus Græcus; yet he has remarked, that in the description of the 'ignis volatilis' of that author, no indication is found of that interior vacuum, which obtains in the rocket, from the orifice or vent, along the mass destined to feed combustion; a vacuum to which moderns have given the name of bore, from its analogy to the bore of a cannon, and which is so necessary for the movement of the rocket, that the author is obliged to admit, that some mechanical means must otherwise have existed for discharging the Greek fire.

* Vide page 22 of the 27th Number of the Quarterly "Journal of Science, Literature, and the Arts," for "Conjectures respecting the Greek Fire of the middle Ages, by J. McCulloch, M. D. F. R. S."—Ed.

“ The author of the article we are now reviewing introduces here part of an account of Congreve’s rockets, published by M. Montgery in the *Bulletin* of August 1821, and adds the name of Colonel Geissler to those Mr. Montgery cited as having proposed the use of rockets in the armies of Europe long before 1805, the period when Congreve gave his name to this weapon, by bringing it to perfection, and causing it to be again brought into use.

“ The Editors of the *Militair Blatter* have also claimed priority of invention in favour of Colonel Geissler; and there is no doubt, from a passage in a work which they cite, that this officer made an experiment at Berlin in 1668, with rockets similar to those at present in use.

“ The projectile rockets of Colonel Geissler carried a shell of 16 lbs. and weighed from 50 to 120 lbs.; the other rockets were of that description termed incendiary, or carcass. Plans of these rockets are given in the work, but neither the one nor the other was employed during the war, and they were soon forgotten. It was not till the end of the 18th century, after the campaigns of the English in India, that the idea of introducing the use of rockets into European armies was renewed.

“ We shall not here enumerate all the occasions on which they have been used since 1805, but return to the work of M. Paixans. *Nouvelle Force, Maritime et Artillerie*, p. 34.

“ The German author agrees with the French officer, that rockets have not up to this date produced any very important effects, such as could not have been obtained in a more sure and complete manner with ordinary firearms. Not only does he repeat all the facts which have been brought forward by M. Paixans in support of his opinion, but he confirms them by new evidence. These facts relate to the bombardment of Copenhagen, Dantzic, and the siege of Wittenberg, where the allies threw a great number of rockets. The Austrians had a rocket battery at the siege of Hunengue, in 1815, but they made no use of it. In their campaign against the Neapolitans in 1821, they had 15 rocket carriages: they made use of them with success at Antrodocco, Montecassino, and San-Germano; but it is extremely likely that they would have put

the Neapolitans to flight with equal facility without throwing any rockets.

“ Since 1816, experiments have been made with this new weapon in Prussia, Poland, and Saxony, which, as far as we know, are still continued. We must so far do justice to France, that she alone has made no mystery of the composition of her rockets. The conduct of other powers in this respect is contrary to the progress of art; they entrust their secret to some working artificers, who constantly follow the same process. Thus we are acquainted with the composition of the rockets thrown by the English, and for a long time knew of no other : a considerable quantity of *roche à feu* was used. It is only lately that in Austria they left off making rockets in imitation of English ones.”

ARTICLE XV.
A TRANSLATION
FROM THE
BULLETIN DES SCIENCES MILITAIRES
FOR APRIL 1825.

OF SOME OBSERVATIONS ON A WORK ENTITLED,

“Physical and Mathematical Considerations on the Combustion of Powder ; and Observations on a Part of the first Chapter of a Treatise on the Science of Artillery, by M. Borkenstein (Milit. Let. Zeit. 1824,) is submitted to our Readers, as noticing some new Doctrines on the Ignition of Gunpowder maintained on the Continent of Europe.

“Among the authors who have written on artillery, some have adopted, with Belidor, the opinion that the inflammation of powder is gradual, others, with Robins, have maintained that it is instantaneous.

“A later author, M. Borkenstein, opposes both these opinions: he distinguishes ignition from combustion, and considers the first, which takes place on the surface of the body, as instantaneous, but the second as gradual, and requiring a definite time. The work in which M. Borkenstein has brought forward this theory is entitled, *Versuch zu einem Lehrgeband der theortisch prattischen Artillerie. Wessenschaft.* An Essay on the fundamental Principles of the Theory and Practice of the Science of Artillery. It is remarkable for the rigour of its mathematical demonstrations, which the author has employed wherever necessary; but he has left much to be filled up in the chapter which treats on gunpowder, not having given any account of the works of Proust, Manecki,

* Robins only argues, that “it may be safely supposed, that the whole charge is fired, before the bullet is sensibly moved from its place.” Perhaps some of our readers may feel obliged by our here mentioning the result of an experiment, lately made with Allahabad and Ishapoor gunpowders, manufactured in the year 1825. Two trains, each of 100 lbs. weight, and 525 feet in length, were placed very regularly upon the top of the parapet of a barrack, and fired at the same instant. One burned out in 40, and the other in 42 seconds, or at the rate of only about 12 or 13 feet per second.—Ed.

and other distinguished chemists, who have appeared since Rumford.

“ M. Borkenstein opposes the partisans of successive ignition, by stating that cannons generally burst at the first reinforce, between the breech and the plat band behind the trunnions: but after reaching beyond the trunnions, the gas expands more, and consequently has less expansive force. Consequently the bursting of cannon at the first reinforce forms no serious objection against the theory of successive ignition. The duration of ignition, although complete, is extremely short: that of the charge of a 6-pounder is only fifteen or eighteen tierces (a quarter of a second,) according to the observations of General Hellwig (Gilbert’s *Annals of Medicine.*) This time might even be reduced to ten or twelve tierces, by deducting some tierces for the time required to ignite the priming. M. Borkenstein opposes the partisans of instantaneous combustion, by quoting the following passage from the *Treatise on Chemistry*, by Mr. Berzelius, p. 377 of the German translation by Blode and Palmstedt. ‘ Howard tried several times to employ fulminating mercury as cannon powder: but in all the experiments he made, the cannon burst, and the projectile was thrown a very short distance. This effect, so different from that which is obtained with common gunpowder, should be attributed to the rapid combustion of the fulminating mercury; it takes place so instantaneously, that the projectile has not time to issue before the bursting of the cannon, or condensation of the gas. On the contrary, with ordinary powder, which is only a mechanical mixture of several ingredients, the combustion lasts longer; and when finished, the projectile is already in motion.’ ”

We shall not follow the author of this article in his critical observations on the theory of M. Borkenstein. We would require to study the theory in the original work of the author, in order to give an account of it.

In our next, we hope to give our Readers some account of the Windage question, which has long been under discussion in Bengal ; and which, with other subjects before the Artillery Select Committee in Bengal, we propose to enter upon, in detail.

AND THE FORT OF
St. Ignace
 IN THE

[illegible]

18 (A) 1st Bellows and Timbers
(B) Nations of Green Mountain
the island are Melancholy.

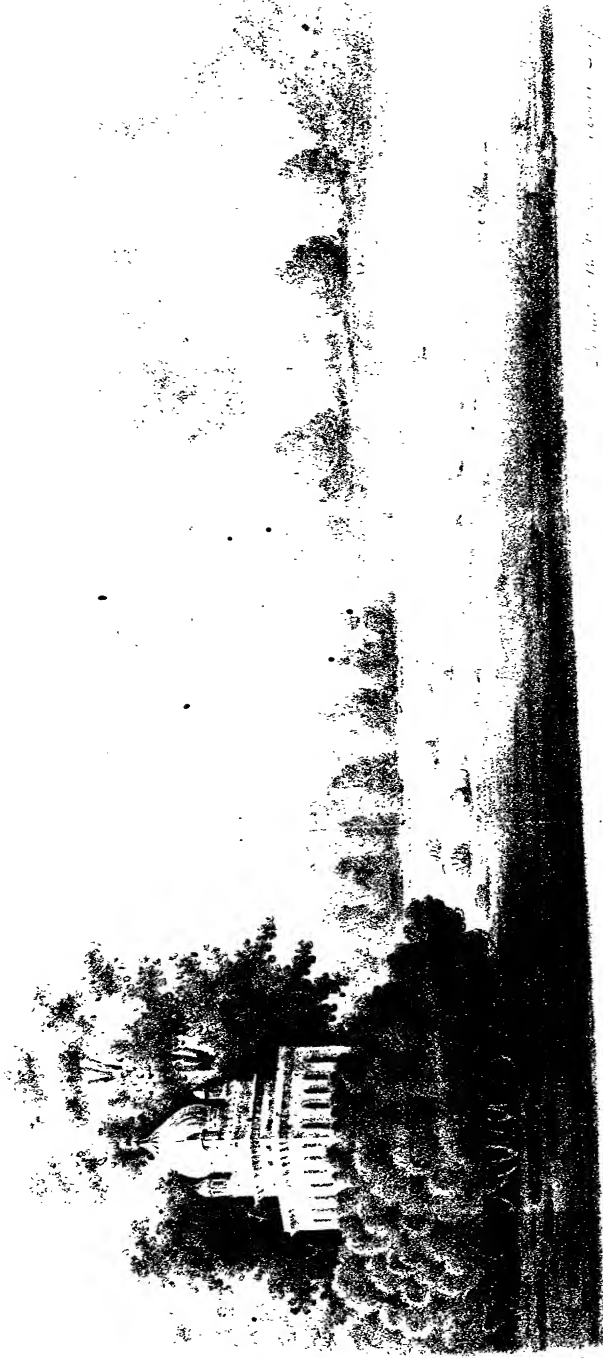
Discussion on the results

Revised Model Repository, V. 8.0.X

Calcutta Samuel Smith & Co 1st August 1826.



*View of the B. arch at the N.W. Gateway
of ADJEECHUR.*



ADJECHUR

View of the East face of the Fort. of Adjechur

From a distance of about 1000 paces

in the direction of the Fort

THE
BRITISH INDIAN
Military Repository.

VOL. IV. PART III.

ARTICLE I. BENGAL SIEGES.

Immediately after the siege of Gannourie, the following plans for raising a corps of pioneers, and a company of miners, in Bengal, (originally prepared by Colonel Horsford of Artillery,) were submitted to Government, and acted upon, on the 26th March, and 29th April 1808: Government being convinced by the events of the Siege of Kannonah, of the necessity of augmenting this too long neglected branch of the army, so highly important, and indispensably necessary, in siege warfare.

PLAN OF AN ESTABLISHMENT OF A PIONEER CORPS,
for the Presidency of Bengal.

This corps to consist of eight companies.

Each Company,

2 Commissioned Officers,	}	Europeans.
2 Sergeants,		
1 Subadar,	}	Natives.
1 Jemadar,		
4 Havildars,		
4 Naicks,		
80 Privates, —Pioneers or Sappers,	}	

Establishment to this Company.

- 1 Puccaulee.
- 1 Native Doctor.
- 1 Dooly.
- 1 Cart.

1 Mate,.....	}	Smiths—or one Forge
1 Fireman,		
1 Fileman,		
2 Hammermen,		
1 Mate,	}	Carpenters.
2 Carpenters,		
2 Tent Lascars,	}	Qr. Master's Establishment.
1 Hand Beesty,		
1 Sweeper,		

The Corps of eight Companies.

16 Commissioned Officers, ...	}	Europeans.
16 Serjeants,		
8 Subadars,	}	Native,
8 Jemadars,		
32 Havildars,		
32 Naicks,		
640 Privates,—Pioneers or Sappers,	}	

Establishment for the Corps of eight Companies

8 Puccaulces.		
8 Native Doctors.		
8 Doolies.		
8 Carts.		
8 Mates,	}	Smiths—or 4 Forges
8 Filemen,		
8 Firemen,		
16 Hammermen,		
8 Carpenters' Mates,	}	Carpenters
16 Carpenters,		
16 Tent Lascars,	}	Qr. Master's Establishment.
8 Hand Beesties,		
8 Sweepers,		

Principles on which this Plan has been drawn out.

This corps should in India be established for two principal purposes, that of clearing and making roads for the troops, artillery, and baggage of an army; and that of carrying on the approaches, making the places of arms, parallels, &c. before places laid siege to. In doing the first, the corps will fall under the name of Pioneers: in performing the last, it will take the denomination of Sappers. Another part of their duty is that of cutting down materials; and preparing from them fascines, gabions, pickets, &c.; which in strictness, belongs to them neither as pioneer or sapper.

Viewing this corps in its first character of Pioneer, little more need be said, than that it ought to be composed of men of great courage and bodily strength; for as they always precede the line of an army, they are among the first to meet the enemy; and in digging the earth and removing obstacles on the road, they are necessarily subjected to great labour and fatigue.

But in considering its second character as Sapper, it may be proper to enlarge, as the plan of this establishment has in great measure been suggested by its duties and dangers, and in a particular manner adapted to it.

In carrying on the attacks at a siege, we have always found it most convenient, as well as efficient, to divide the pioneers of the old establishment into sections or brigades of ten men each, placing at the head of each brigade a non-commissioned officer, either Havildar or Naick; and over every four brigades, (or 40 privates, with their non-commissioned officers,) one commissioned European, and one commissioned native officer. Of serjeants we have had none, and grievously found the want of them. Such has been the manner of employing the pioneers, as long as casualties did not deprive us of the means of doing so.

This manner of setting the pioneers to work at a siege, happens to agree pretty nearly with what has been practised in the French service. This nation has sometimes divided a corps of sappers, consisting of 10 men, into five brigades of eight men each; and each brigade into sections or squads of four men each, with its chief or head: the whole corps of 40 men, with their chiefs or heads, being commanded by a captain and two lieutenants, commissioned officers, and two serjeants.

But without insisting on the authority of the French service, the casualties are so numerous which befall a body of men working for many days and nights without cover, or under very imperfect cover, from the cannon and musquetry of the place besieged, that the proportion of commissioned and non-commissioned officers, as detailed in the plan, and suggested by experience and practice, cannot be reckoned too large; nor can the number of the men in the brigades be reckoned too small; considering that the business is for the most part carried on in the darkness of the night; and the utmost vigilance and quicksightedness is required in the superintendent, to keep the men to their work, and prevent their absconding.

Ten pioneers or sappers, with a non-commissioned officer at their head, may then be considered as the lowest division, or first elements of the corps; and a company of pioneers or sappers, may be composed of as many of these elements or brigades, taking care to add the due proportion of superintending commissioned and non-commissioned officers, as may be found most convenient. But the total number of 80 privates, or those of eight brigades, seems to be the most convenient and fitting, on account of the facility it affords in division.

1 *Puccaulee*.—This is the proportion, very nearly, of what is allowed to a company of Sepoys.

The Native Doctor and Dooly.—Casualties and sickness cannot but be frequent in this corps, of great danger and all work; and a medical man and carriage of this description will constantly be in demand.

The Cart.—Numbers of tools are broken and lost, especially during a siege; and spare ones ought always to be carried with the company. Entrenching tools are heavy; and one cart for the carriage of the spare is as little as can be given.

The Artificers.—One forge of smiths and three carpenters. The forge is required for the repairs of the tools and arms; and the carpenters for replacing the helms of the pickaxes, mamooties, felling axes, &c. which are constantly breaking. Carpenters are also much employed during a siege, in shaping and pointing the uprights for gabions, cutting out and pointing various kinds of pickets, &c.

The Quarter Master's People.—One tent lascar is required to take care of the serjeant's tent; and one lascar for the pauls, on the march and in the storerooms. The hand beesty and sweeper are for the use of the serjeants.

Arms and Accoutrements.—It seems expedient that the men of this corps should have arms of defence. It is true that they must principally depend for protection on the vigilance and courage of the covering parties of troops, more especially at sieges; but when they are pushing on the sap close up to the ditch of the place, the covering party of troops cannot be posted between them and the enemy; and they should have some means of defence at hand for the first moments of a sally, which will be always sudden. Arms will give confidence. Besides, they are detached from camp during a siege, to cut down materials, and are liable to be attacked by the villagers and looties. A hanger or tulwar, and a pistol, in a belt round the middle, (it is too loose when the belt crosses the body,) and hanging perpendicularly down the outside of the thigh, may be useful, and will not be inconvenient arms.

Pay, Batta, and Clothing; Tentage and Medical Attendance.—It has already been stated, that the men of this corps ought to be of high courage and great vigour of body; and that they are in an extraordinary degree exposed to danger and fatigue. Now the bravest and most robust men in Hindoostan are those of the highest casts. But such will not serve, if marked as an inferior order of soldier by a diminished pay, and a clothing of an inferior quality. It is requisite, therefore, in order to ensure the enlisting of men fit for this laborious and dangerous service, to establish the same ranks, pay, batta, clothing, tentage, and medical attendance, as is allowed to the corresponding classes in the sepoy corps. An additional argument is, that the men of this corps are sappers, as well as pioneers; and the pay of a sapper is in all services large, much larger indeed than that of a common soldier.

Allowances.—The commissioned officers have at present an extra allowance, which it is proposed to continue, for the same reason that established it.

An officer commanding a company of sepoys has a monthly allowance of St. Rs. 50, for repairing the arms of his company, and for a writer and stationary, for keeping the books of the company, and making out the monthly papers, &c. The officer commanding a pioneer company will have to keep his arms in repair; and he must consume a good quantity of iron, steel, and charcoal, in pointing and steeling his entrenching tools: he will also have to keep books, and make returns precisely the same as the officer commanding a sepoy company. It seems reasonable, therefore, that the allowance granted to the one, be extended to the other.

The tents of the natives must be kept in repair; and to do it, the same allowance that is given to a sepoy quarter-master should be given to the officer commanding a company of pioneers, in proportion to number.

A pay havildar is necessary to each company, and is allowed to a company of sepoys, of nearly the same strength.

When the laborious and dangerous occupation of a pioneer or sapper serjeant is considered, and the high pay given to the latter character by the states of Europe, and the necessity of having men of the best behaviour for these posts, is also taken into account, this extra allowance of St. Rs. 20 per month, can scarcely be looked upon as extravagant.

ESTABLISHMENT OF A COMPANY OF MINERS, *for the Presidency of Bengal.*

The miners proposed for this company must be entertained from among the native miners of Hindostan. The profession of miner, with the principles and rules of the art, founded, as is maintained by them, on custom and experience, has, like almost all others in India, been handed down from father to son, for a long succession of ages. Miners, in common with the men of other casts in India, are not to be put out of their usual road. We are therefore under the necessity, if we chuse to employ them, to take the same track, and to adapt our establishment, (so far only, nevertheless, as it does not militate against our better knowledge,) to their notions of established usage and propriety.

A corps, or gang of miners, is in Hindostan, divided into actual miners,—labourers attending on the miners, called bildars,—carpenters, and puccaulees.

The first dig out and shape the galleries and chambers; the second remove the earth, as fast as it is dug by the former; and also prepare the clay or earth for stopping the chambers and galleries: the carpenters prepare the wooden materials for stopping the chambers and supporting the galleries; and the last, or the puccaulees, serve the water to the bildars, for the purposes just mentioned.

There is nothing in the composition of this gang of miners that may not be closely followed by us, in a plan for a regular company. We pursue in Europe, nearly the same method, in carrying on the galleries and in excavating the chambers; and though our mode of lodging the powder, and of stopping the mouth of the chamber and the galleries, is somewhat different; yet that of Hindoostan suits the dryness of the soil; is now settled beyond the reach of alteration, by the habits and prejudices of the miners; and is in fact, abundantly successful, being indeed little different from what is in Europe called the "old method;" when the powder was put into casks with the heads knocked in, and a stave or two broke for the purpose of communication, and loose powder strewed between them, (in Hindoostan the powder is put into perforated duffers, with loose quantities of it, strewed in the same manner;) and before cubical boxes, and stopping with masonry, were introduced.

A company of miners will then be composed as follows:

One Company.

6 Sirdars,	} Miners.
40 Miners,	
5 Sirdars,	} Bildars, or Assistant Miners.
80 Bildars,	

Establishment to this Company

5 Puccaulees, or Watermen,	
1 Mistry,	} Carpenters.
1 Mate,	
6 Carpenters,	
1 Pay Havildar or Sircar.	
1 Native Doctor.	
1 Dooly.	
1 Tent Lascar.	
1 Cart.	

Arms and Accoutrements for the Company.

Same as proposed for the pioneers and sappers.

Pay and Batta of the Company.

Each Sirdar Miner,	20 St. Rs. per month. on half batta.
	30 ditto, full ditto.
Each Miner,	7 St. Rs. per month, on half batta.
	10 ditto, full ditto.
Each Sirdar Bildar,	7 St. Rs. per month, on half batta.
	9 ditto, full ditto.
Each Bildar,	5 St. Rs. per month, on half batta.
	6 ditto, full ditto.

The Pay Havildar or Sircar, St. Rs. per month, 10.

Every other description of people, the same pay and batta as is allowed on the fixed establishment of the service.

Clothing.

A grey or green jacket, and blue turban.

Tentage and Medical Attendance

Same as for the pioneers, in proportion to number.

Allowances.

To the commanding officer of the company, for writers, stationery, repairs of arms, &c. Sonat Rs per month, 50.

To the commanding officer of the company, for keeping in repair the pauls,— same as to quarter-masters of native corps, in proportion to number.

To the commanding officer, for a cart for the miners' tools, St Rs. per month, 30.

To the commanding officer, for a pay Havildar or Sircar, St. Rs. per month, 10.

Principles on which this Company is proposed to be established.

The Miners.—The labour, heat, and difficulty of a free respiration is so great, when the gallery is pushed on after the first day's opening, that the miners are unable to remain in it above half an hour at a time. Speed is the soul of mining: the loss of even fifteen minutes may be the occasion of blowing the whole party into the air, or of smothering them in the soil. Not a moment therefore must be lost, either through lassitude or inaction; and the working party must be relieved every half hour, day and night.

Every miner must have $3\frac{1}{2}$ hours rest; or in other words, he must be on duty, one half hour in every eight half hours.

There are 18 half hours in a day and night. One man works six half hours, or three whole hours in the twenty-four. Eight miners then, must be allowed for the day and night.

But *two* miners always work abreast of each other in India; therefore the number of miners for every 24 hours is sixteen.

They must have one day off to one day on duty, at least: this makes thirty-two miners.

An allowance for casualties in this most dangerous service ought to be made, equal to one third. We may however take it at not quite so much, and call the total 40 miners.

A Sirdar is requisite, to superintend the gangs of every four hours work, which makes six in the total.

Bildars.—Every bildar, or assistant miner, must be placed within reach of another, to hand along the baskets of earth to a distance from the gallery; to pass along also the various tools required by the working miners, &c. Their stations may be reckoned at two yards asunder.

A gallery can, in Hindostan, be carried on at the medium rate of

15 feet, or 5 yards in 24 hours. This agrees pretty nearly (allowing for difference of size and climate) with what is performed in Europe, in a light soil, by the most experienced miners; three toises, or eighteen feet, being there the estimated distance in the same time.

There will then be required of bildars as follows :

1st day,	..	5 yards,	.. ..	12 men of bildars.
2d ..	..	10 ditto,	.. ..	24 ditto.
3d ..	..	15 ditto,	.. ..	32 ditto.
4th ..	..	20 ditto,	.. ..	40 ditto.
5th ..	..	25 ditto,	.. ..	48 ditto.
6th ..	..	30 ditto,	.. ..	60 ditto.
7th ..	..	35 ditto,	.. ..	68 ditto.
8th ..	..	40 ditto,	.. ..	80 ditto, or bildars.

On the 1st day,—3 bildars are required to be stationed. They work one hour in every four, or six hours in every 24.

4 gangs of 3 men each will then be required, which amount to .. 12 men.

On the 2d day,—Working as before, with respect to time and distance; 6 bildars will be stationed; or 4 gangs of 6 each, .. 24 men.

On the 3d day,—8 bildars are stationed; or 4 gangs of 8 each, 32 men.

On the 4th day,—10 bildars are stationed; or 4 gangs of 10 each, .. 40 men.

On the 5th day,—12 bildars are stationed; or 4 gangs of 12 each, .. 48 men.

On the 6th day,—15 bildars are stationed; or 4 gangs of 15 each, .. 60 men.

On the 7th day,—17 bildars are stationed; or 4 gangs of 17 each, .. 68 men.

On the 8th day,—20 bildars are stationed; or 4 gangs of 20 each, .. 80 men.

One sirdar must be allowed for the superintendence, and be three hours off and one hour on, which makes four sirdars. But this would be very hard duty, if the gallery be of the utmost estimated length; for it would last for eight days running. An additional sirdar, therefore, in case of sickness, should be given, which makes the total five.

In the above statement, the utmost length of the gallery is supposed to be 40 yards, without branches; and the chamber, or chambers, not included. It may be less, and will seldom be more. It will appear that nothing is allowed for casualties: 1st, Because the estimate is taken at the maximum; and, 2dly, Because bildars may, though miners cannot, be more readily replaced, on extraordinary casualties.

Arms and Accoutrements.—Miners are, in all services, armed with a pistol, to shoot those of the enemy's, when they can be reached in their own galleries; or for defence, when the enemy's miners break in on them. Native miners always carry a tulwar into the galleries, and most

likely would not think themselves perfectly safe without it. It may be proper to indulge them in this prejudice. Pistols are, however, a much better arm. If the state does not chuse to go to the expense of a pistol per man, a certain number may be kept in store, to be served to the working party, when on actual service. The bildars ought to have a hanger and belt.

Pay and Batta.—What is set down for the stipend of the miners, is what was paid to those hired at Kamonah, &c. in the Upper Doab, and is, as far as we could learn, the usual pay of such people in Hindostan. It may also be added, that a present is always expected on springing a mine. This present was given at Kamonah, though not charged to the state; but it is not proposed that such presents be given to a regular establishment. Good miners cannot be hired for less wages; they know the dangerous nature of their occupation, how necessary they are when resorted to, and insist upon being well paid, and indulged.

The bildars, or assistants to the miners, also, knowing that they run the same danger as the miners, will not serve on the pay commonly given to a man who merely clears away the roads, or digs the earth in safety above ground, and demand higher wages.

Clothing.—It may be thought proper to give the miners, when become a fixed and regular establishment, some kind of dress to mark them as such. A jacket of the same colour as the pioneers, but of an inferior quality, or of any other colour, which will hide dirt, is what is best suited to their occupation.

Tentage and Medical Attendance.—Tents have been granted by Government to the troops for the preservation of their health; and medical attendance for the restoration of it, when lost. This useful corps may pretend to the same indulgence.

Allowances.—To the commanding officer of the company, for writer, stationary, &c. and for keeping in repair the pauls, &c. The first is for keeping the books, making out the returns of the company, same as is granted to a sepoy commanding officer of a company. The purpose of the last is sufficiently obvious.

Allowances for a Cart.—The tools of miners are various, many, and heavy, and require a cart to carry them.

Allowances for a Pay Havildar or Sircar.—A man of this description is necessary, and is allowed to all native companies. As he will have double the business to do, numbers considered, that a pay havildar to a sepoy company has, it seems reasonable that the allowance should have a proportional increase.

Puccaulees, or Watermen.—To stop the chambers and galleries of mines, besides doors, billets of wood, &c. dry clods, and wet balls of earth, according to the distance of the powder, are made use of. At the entrance of the gallery, the wet earth or clay is previously kneaded, and then made up into large balls, for the more ready carriage and ap-

plication. It must be evident that a great quantity of water will be used in this preparation; and it will be brought from a considerable distance in general; always from a distance beyond the beginning of the trenches. Four puccaulees are put down for this duty; the fifth is to supply water to the miners, &c. according to the usage of the service.

Carpenters.—This number of artificers will be fully employed in cutting down trees, making the doors to shut up the chambers, and in splitting and sizing the billets of wood, for choaking the powder in the chamber, and stopping it, as well as the galleries. If the soil be loose and sandy, they will also be employed in preparing the planks, &c. for the support of the galleries. It must, however, be observed, that when this happens, a much greater number of carpenters, together with several sets of sawyers, than what is here put down, will be required.

Native Doctor and Dooly.—These are allowed to a sepoy company. What is proposed here, is on somewhat of a lower calculation, numbers considered, than what is allowed to a sepoy company.

Tent Lascar.—If tents be allowed to the mine company, this man will be required to take care of them on a march, and in the store-rooms.



The next attack of any importance under the Bengal Presidency, after that of Doondiah Khan's forts of Kamona and Gunnouric, was that of

ADJEEGURH, IN BUNDLECUND.

The fort of Adjeegurh, in Bundlecund, is said to have been originally built by Adjee Gopaul, a chief, the date of whose reign is stated to be beyond all existing records.

It is situated in North Latitude $23^{\circ} 57'$. East Longitude $81^{\circ} 18'$, and stands on a detached portion of that range of hills, or ghauts, which separates the low country from the elevated diamond district of Punnah, about 80 miles, in nearly a southerly direction, from Chilla Tarah Ghaut on the Jumna. It contains some curious specimens of ancient architecture in temples, built of stone without cement; the sculpture of which, as well as that on various rocks about the fort, is evidently far more ancient than the ramparts, which have been repaired at different times by the various chiefs who followed Adjee Gopaul, down to Rajah Chuttersaul and his descendants.

The Fort was attacked by Ali Bahadoor, father of the present Shumshere Bahadoor, about the first year of the current

century, and possession of it was obtained by that chief, after a short siege.

When Shumshere Bahadoor entered into terms with the British Government in 1804, a force of irregulars, in the pay of our Government, commanded by Colonel Meiselback, was sent to receive charge of Adjeegurh, from Shumshere Bahadoor's Killedar.

On the Killedar receiving an advance of some thousand rupees, to pay up the arrears of the garrison, the Fort was given up to Colonel Meiselback; but Lutchmun Dowah, a Bundeelah Rajhpoot chief, having bribed the Killedar with a larger sum than he had obtained from Colonel Meiselback, escalated the fort with a body of his troops, and caused Colonel Meiselback's force to abandon the place.

This almost inaccessible hill is about 800 feet in perpendicular height; the acclivity in every part is extremely steep, and thickly covered with wood and jungle; and near the top, the rock is entirely perpendicular, at most places of a great height, but at none less than 30 feet. The form of the hill is very irregular, but approaching to an equilateral triangle, being two miles and six furlongs in circumference at top. Round the whole of this space, a stone parapet and rampart is raised, of various height, from ten to twenty feet, generally without cement; and in some parts there is only a parapet on the very edge of the perpendicular rock.

Opposite the northwest angle of the fort, where the principal gateway is situated, stands the hill of Bahowta, the highest point of which is not more than 460 yards from the walls of the fort; but it is not so much elevated as the gateway of the fort, by at least 200 feet, and therefore cannot be said to command it. On this point there is not sufficient space for erecting a battery of heavy guns; but on the shoulder of this hill, at a less elevation, and at nearly 600 yards from the walls of the fort, is a narrow ridge, where batteries can be erected. This is the only spot round any part of the fort, where batteries which could have any effect on the rampart of the fort can be placed. Any breach, however, which could be made from this point, would tend but little to the fall of the place, if resolutely defended; for the breach would necessarily

in itself be so difficult to be clambered up, and the previous ascent of the hill so steep, that a very few determined men could defend it against great numbers.

Opposite the north-east part of the fort, is the small hill, or rather rock of Rada Tongah, which is within musket shot, being not more than 200 yards from the walls of the fort, but not quite so high. This isolated spot is so perfectly perpendicular on all sides, for a very great height, that it would be morally impossible to transport cannon to it, or to form a lodgement on it, provided the garrison opposed this operation; and were this even effected, it could be of no use, for the side of the fort opposite to it is a precipice of 140 feet of perpendicular rock, and the space between them is covered with the thickest jungle.

The interior surface of the fort is very irregular and rocky, with but little soil. There is, however, abundant flat space for erecting buildings. There are two capacious tanks for water, which are not, however, wholesome in the hot weather. But there are many springs of good water on the face of the hill, which with a little trouble can be had recourse to, so that the place may at all times be esteemed sufficiently well supplied with water.

Two of the principal passes, through that range of lofty hills which divides the south of Bundelcund from the adjacent provinces, lie in the vicinity of Adjeeghur, viz. the Bisramgunge, and Entewah Beridgepoor Ghauts. This fortress may therefore be considered as commanding these passes, and the roads leading from Bundelcund towards Berar, Candeish, and the Deckan.

On the 9th of December 1806, it appears that Lutchmun Sing, commonly called Lutchmun Dowah, then in actual possession of the fort of Adjeegurh, who subsequent to the establishment of our Government, had usurped that fortress, as well as certain tracts of land which belonged of right to Kishore Sing, Rajah of Punnah, and others of Chuttersaul's family, and had carried on a predatory system of warfare from the usurped country above the ghauts, upon the low lands of Bundelcund in the occupation of individuals under our protection, was allowed, as in

actual possession of Adjeegurh, to enter into a written engagement* with Captain Baillie, then Agent to the Governor General in that province, by the fifth article of which, he promised to deliver up that fortress, on the expiration of two years, paying annually in the interim, 4000 rupees into the British treasury, as tribute, over and above the fixed revenue of Bechound, which was granted to him in *istimrar*, or perpetuity.

* *Draft of an Engagement, to be required from Lutchmun Sing of Adjeegurh.*

Whereas I Lutchman Sing, sincerely professing obedience and attachment to the Government of the Honourable East India Company, have ranked myself among the number of its faithful dependants and adherents, and whereas Captain John Baillie, Agent on the part of the Honourable the Governor General for the management of the affairs of Bundelcund, has required from me an *Lkrar Namah*, or obligation of allegiance to the British Government, in the manner under written. Therefore, and in consideration of the liberality and favour of the Government which has lately been extended to me, I have prepared and transmitted to Captain Baillie this formal engagement, comprizing nine distinct articles, signed and sealed by myself, and I hereby promise and declare, that I will never infringe any of those articles; but will strictly observe and perform the several conditions which are contained in them.

ARTICLE I.

I hereby engage never to aid, nor be concerned with any marauders within or beyond the British possessions in Bundelcund; never to admit marauders to the fort or neighbourhood of Adjeegurh, nor to harbour them in any of the villages which may be under my authority. I further engage to prevent the families and relations of all freebooters and marauders from residing in any of my villages, to maintain no correspondence nor intercourse with persons of the above description; to abstain from all quarrels and disputes with the servants and dependants of the British Government; and scrupulously to observe the duties of allegiance and submission to Government, on every future occasion.

ARTICLE II.

I hereby engage to guard all the passes through the ghauts which are subject to my authority, in such a manner as to prevent all marauders from ascending or descending these ghauts, into the Honourable Company's possessions; and I pledge myself to protect the British territory from all predatory incursions through any of the said passes.

In answer to an additional paper of requests, presented by Lutchmun Sing, Captain Baillie engaged, on the part of the British Government, (which was subsequently confirmed,) that in the event of Lutchmun's surrendering Adjeegurh according to agreement, the whole of the territories specified in his sunnud should be confirmed to him for ever.

ARTICLE III.

If at any time the British troops shall be directed to ascend the ghauts by any of the passes which are subject to my authority, I hereby promise and engage, that I will not oppose or impede the progress of the troops in any manner; and on the contrary, that I will send with them respectable and intelligent persons for the purpose of conducting them by the most convenient routes.

ARTICLE IV.

As some of the villages above the ghauts which have been granted to me contain diamond mines, I hereby promise to abstain from all interference with those shares of the mines which originally belonged to Juggut Raj, and to the Peishwah, and to confine myself to that portion of the share of the family of Hirdeesah which has been granted to me; and I agree to deliver over all those mines to those persons to whom the British Government may be pleased to assign them, and to assist those persons in the exercise of their rights.

ARTICLE V.

I hereby promise and declare, that on the expiration of two years from the date of this obligation, I will without hesitation, or further delay, deliver up the fortress of Adjeegurh to the officers of the British Government; and until that period, I agree to pay unto the treasury the sum of four thousand rupees per annum, as a tribute, over and above the fixed revenue of Bechound, which has already been granted to me in Istimrar.

ARTICLE VI

If any subject of the British Government abscond, and take refuge in any of my villages, I agree to seize and deliver him up to the officers of the British Government; and if any person on the part of the Government be sent in search of him, I promise not to oppose, but to assist such officer in apprehending the defaulter.

ARTICLE VII

I engage not to harbour, nor give protection to thieves or robbers in any of my villages; and if the property of merchants or travellers be stolen or plundered in any of the villages subject to my authority, I agree to render the Zemindar of such village responsible for the restoration of the stolen property, or for the seizure of the thief or robber; and all murderers, or other persons amenable to the criminal

In the beginning of the year 1808, however, we find Lutchmun evading payment of the 4000 rupees mentioned in his engagement, as also of monies due on other accounts, although these were repeatedly demanded by the Governor General's Agent; and instead of paying these sums, tendering (and that in part payment only of his arrears) a bond received by him from a person named Kaim Roy Ditchit, then deceased, whose heirs were unable to liquidate its amount.

It was not to be expected that the British Government, after having formally confirmed the treaty negotiated by Captain Baillie, would have hesitated to enforce its stipulations against this lawless marauder. Our readers will therefore be surprized to learn, that although Mr. Richardson, who succeeded Captain Baillie as Agent to the Governor General in Bundelcund, was authorised to resume certain of Lutchmun's lands, in case of his persisting in non-payment of arrears; yet that in regard to the surrender of the fort (the most material part of the engagement,) he was ordered to make a new arrangement, *on the basis of Lutchmun retaining his fort permanently; or for a period of time beyond that stipulated for its surrender.*

This change of measures is to be attributed to the action of those principles of defensive, but highly questionable policy,

jurisdiction of the British Government for crimes committed in the British territories, who may take refuge in any of my villages, shall be immediately seized and delivered over to the officers of the British Government.

ARTICLE VIII

One of my near relations shall always be in attendance with the principal officer of the British Government, for the purpose of executing his commands.

ARTICLE IX.

I hereby promise and bind myself to be responsible for all damage or loss, which may hereafter be sustained by the British Government, in consequence of the depredations of Rassa Ram, Gootey Jemedar, Bheem Dowah, and the marauders who have lately descended the ghauts, to plunder the British dominions; and to exert myself to the utmost of my power, for the entire suppression and destruction of all these marauders.

(A true copy.)

(Signed) J. BAILLIE, A. G. G.

which so strongly influenced the councils of Calcutta, immediately subsequent to Marquess Wellesly's, and previous to Lord Hastings' administration; in pursuance of which, the territory of the Honourable Company was to be contracted, in order to be rendered more defensible. But, however just or practicable so questionable a system might be, in relation to states with which no treaty operating against it existed, yet its application to Adjeegurh would certainly have materially lessened that reputation of maintaining the highest respect for public engagements, which the British Government had established throughout Hindostan. Judging of others by themselves, the natives of Bundelcund would not have failed to attribute the new proposition to an inability to enforce the stipulations of the existing treaty. The Bengal Government were soon, however, convinced of the impolicy of this mode of proceeding, and readily listened to the arguments of the Governor General's Agent, for adhering to the terms of the negotiation concluded by Captain Baillie; and finally authorised his successor, Mr. Richardson, to demand the surrender of Adjeegurh at the expiration of the stipulated period.

To prepare for non-compliance with this requisition, the Governor General's Agent was authorised to communicate with the officer commanding the troops in Bundelcund, with a view to the formation of a detachment of sufficient strength, with a proper battering train, for the reduction of Adjeegurh. The utmost secrecy was enjoined to be observed on this occasion, in order that Lutchmun Dowah might be ignorant of the intentions of Government until the last moment, so that he might have no time to strengthen his means of defence, and it was therefore ordered that no demand of surrender should be made, until every thing was ready to enforce it.

Soon after these orders had been issued, Mr. Richardson received intelligence of communications having passed between a marauding rebel chief, named Gopaul Sing, and Lutchmun Dowah; the former proposing to secure an asylum for his wife and family in Adjeegurh, and offering to unite in expeditions of plunder with Lutchmun Dowah, who was stated to have agreed to the proposal.

In the latter end of November 1808, the stipulated term for the surrender of Adjeegurh being at hand, we find Mr. Richardson engaged in a correspondence with the several public functionaries in the Western Provinces, on the subject of military operations for the reduction of a number of small forts on the south west frontier of Bundelcund, including finally that of Adjeegurh itself: and, contemplating the improbability of the peaceable surrender of that fortress, we observe him, in the course of correspondence, offering it as his opinion, that the troops then in Bundelcund were not adequate to afford a force sufficient for that siege, and at the same time to maintain the internal tranquillity of the province. In consequence of which, he applied to the Commander in Chief, then in the Upper Provinces, to order such arrangements as his Excellency might consider necessary.

On the 28th November, we find Mr. Richardson, then marching with Major Cuppage's detachment towards the S. W. frontier of Bundelcund, informing Government of his intention to join the force destined for the siege of Adjeegurh, when the arrangements connected with the settlement of the lands on the frontier, in which he was about to be engaged, should be concluded: and strongly insisting on the policy of demanding the surrender of the place at the stipulated period; arguing, that if that step should be delayed, it might induce the Kiledar and the other Boondelah chiefs to believe, that Government considered the enterprize of more magnitude and importance, than it was consistent with good policy to allow them to suppose was due to it.

On the 1st December 1808, contemplating the probability of an opportunity arising of obtaining possession of Adjeegurh, by the payment of the arrears due to the garrison, or by some other judicious application of a sum of money, Mr. Richardson requested the orders of Government thereon; and on the 5th of that month reported, that he had obtained from a person formerly in the confidence of Rajah Row, who had resided a long time in Adjeegurh, an accurate description of the fortress; and that this man, provided he was promised a grant of land to the amount of 2000 or 2500 rupees per annum, had engaged to lead the British troops to two parts of the fort, accessible by escalade. Mr. Richardson refrained on

this occasion from giving any promise to this person; but afforded him countenance by telling him, in general and doubtful terms, that if Government should hereafter think proper to attack the place, then, on his pointing out the accessible places, and leading the troops, so that they should be enabled to enter the fort, he would recommend the reward being granted. But on this point Mr. Richardson requested the definite instructions of Government.

The following is the description of the fort of Adjeegurh, as given by the native above mentioned.

The length of the fort runs from N. to S. about two English miles. It is in breadth about one mile, and in form oblong. Opposite to the N. E. corner, there is a hill called Rada Tongah, within cannon shot. Battering guns might with great exertion and labour, be got up to the summit of this hill*. There are two guns, one upon the wall of the fort, and the other upon a Chabbootrah or platform in the interior, which bear upon Rada Tongah†; but the assailants can protect themselves by throwing up batteries. A battery on that hill would command every part of the fort; but there is no practicable road to assault the fort from the hill, there being deep ravines and thick jungles between the hill and the fort, which render all approach impracticable. No one can escape from the fortress by this way. On the N. W. corner is the great gateway. After having passed five gates, in the form of a zigzag, you arrive within the body of the fort. The ascent to the first gateway is about 500 cubits from the bottom. Within and opposite the said gate, and about 25 yards distant from it, is a tamarind tree. At the foot of that tree, upon a Chabbootrah, raised about five cubits, is planted a great gun, and a ginjall or wall-piece. This gun cannot bear upon the gateway; but after you get within the gate, it will bear upon you. The breadth of the way is about 15 cubits. From the first to the second gateway, the distance is about 100 cubits,

* This was subsequently considered by officers of artillery, who had some experience in these matters, impracticable.

† These guns were found to be of beat iron, and of large calibre, evidently manufactured in the fort, but old, and generally without carriages.

almost on a level, there being but ten steps to ascend, which are formed of stone. There is no gun or wall-piece between these gates. From the second to the third gateway, the ascent is about 20 stone steps. Within this gate, on the left as you enter, is a reservoir of spring water, the water of which does not decrease by use, the source of the spring being in the mountain. From the third to the fourth gate, there are about 50 stone steps to ascend. There is neither gun nor wall-piece between these gates. From the fourth to the fifth gateway, there are about 40 stone steps to ascend; and within the fifth gateway there is a Bungalow raised about two yards, on the south side of which is the ancient house in which Lutchman Sing resided. Within the fifth gateway, on the right and left, are two cannon. The gun placed upon the right bears upon the outer gateway: that to the left does not. All the gates are of wood. On the right, four of the gateways are supported by the rock, and on the left by masonry. The fifth gateway is entirely formed of masonry. There are three guns to the southward of the works of the fifth gateway, two of which are pointed to bear upon the Rada Tongah hill. There are three guns to the east side of the fort, two to the south, and three to the west.

There is another gateway, called "*Tirwan Durwaza*," to the eastward; below which is the village of Tirwan. If a small force blockaded this village, the supplies of the fort would be stopped.

The mode of commencing the siege, as recommended by the native who furnished the foregoing description is, First, that the army should take up its position upon the banks of the Nullah, Deogoun, to the east of the fort, where there is plenty of water, and an extensive plain without cultivation. From thence, by a sudden attack, possession may be taken of the town of Adjeegurh, at the foot of the fort. The situation of the town of Adjeegurh, or as now called, "*Noo Shehur*," is to the west of the fort, and adjoining to the hill on which the fort stands. To the south of the town is a hill, and a small hill to the north. Between the southern and northern hills runs the *Shehur Punnah**, or wall to protect the town.

* Pettah of Southern India.

On the western side of the *Shehur Punnah* there are two gates, which can be destroyed by erecting a battery on the bank of the tank to the westward. After taking the town, it will not be difficult to get guns upon the southern hill, and from thence the battery will bear upon the first gateway, and the guns from that gateway will bear upon the battery.

The Nawaub Ally Bahadur, in attacking Adjeegurh, got his guns upon the hill to the south of the town, when the Killedar surrendered the place.

On the 12th of December* 1808, Mr. Richardson enclosed to Government a letter of the 10th, from Lieut. Colonel Martindell, stating, that Lutchmun Sing had actually commenced hostilities, by taking some cattle and people from the village of Pookar and Shahpore; in consequence of which Lieut. Colonel Arnold had been directed to advance with his battalion from Banda, in the direction of Adjeegurh, and take up his former position at Scurah or Seunda, leaving the necessary guards at Banda, to which latter post three companies of native infantry arrived from Etawah had been dispatched; and Colonel Martindell strongly recommended Mr. Richardson delaying the demands for the surrender of Adjeegurh, till the troops could be assembled.

On the same day Government informed Mr. Richardson, that the tenor of his communications to the several military authorities had been approved, and that the Commander in Chief had been apprised of the intentions of the Governor General in Council with regard to Adjeegurh. That his Excellency would accordingly exercise his own judgment on the question of adding to the force in Bundelcund, and that no further instructions would be given until these arrangements should be known.

On the 14th of December, Mr. Richardson transmitted to Government copy of a dispatch he had addressed to Lieut. Colonel Martindell, in which he requested the Colonel to confine his attention to the defence of the Company's territories adjacent to those of Adjeegurh, and not make any retaliation. The Governor General's Agent at the same time states his doubts (grounded on the intelligence of his newswriter) of the aggression, mentioned by Colonel Martindell to have been

committed against Pookar and Shahpore, having been actually intended by Lutchmun Sing.

On the 17th December, Mr. Richardson forwarded to Government a letter from Lieut. Colonel Martindell, in which was enclosed a copy of a correspondence between that officer and Captain Casement, Acting Deputy Adjutant General in the field, on the subject of the force to be employed in the siege of Adjeegurh; the result of which was, that two additional battalions, two iron 18-pounders, and two 12-pounders, were ordered to be sent to reinforce the force originally destined for the siege.

On the 19th December, Government approved of Mr. Richardson's suggestion of bribing the garrison to abandon their trust, as proposed in his letter of the 1st, and authorised a sum not exceeding 4,000 rupees to be disbursed for that purpose; and on the same date, Mr. Richardson was authorised to give the native who had agreed to lead the troops to two accessible points of Adjeegurh, a promise of the lands required, on condition of his fulfilling his engagement.

On the 19th and 20th December, Major Cuppage's detachment, with which Mr. Richardson was present, attacked the small fort of Heerapore. And we proceed to offer to our readers some account of that operation, as extracted from the journal of the late gallant and much lamented Major Brooke, who commanded the artillery on that occasion.

19th December.—Major Cuppage's detachment marched from Sundah at six o'clock A. M. Expected to have reached the Heerapore ghaut by sunrise, but did not do so till 10 o'clock. Heard at Sundah, that the people belonging to the fort of Heerapore had stockaded the pass, and intended to have stormed it. Had a 6-pounder in advance, and another in rear of the siege park. Advanced guard completed to two companies; found no stockade. Great difficulty in getting up the pass, it being very narrow. Obligated to make the road, through a thick jungle, all the way. A large detached piece of rock in the centre of the road resisted all our efforts to remove or break it; and being higher than the carriage axles, we were obliged to heighten the road on both sides for the wheels. Unlimbered the 18-pounders, brought them up the pass by hand. Gained the top of the pass with the other guns, howitzers, and

tumbrils, (fixing a long dragrope to the front bullock yokes,) by a quarter before three P. M.—the men greatly distressed for want of water. Had still four miles to proceed to camp. Arrived there a quarter before five P. M. A company of infantry left behind, in addition to the rear guard, to protect and assist the store hackeries in getting up the pass. The hackeries arrived by one and two at a time, until six next morning. An hour after we had arrived in camp, I was ordered down to reconnoitre the fort of Heerapore, which it was intended we should attack. I fixed upon a good situation for a howitzer battery. Camp a long way from the fort, owing to the want of water. No water to be got nearer, except under the fire of the fort; in consequence of which our intended position was changed. A Bhcesty going too near the fort for water was fired upon, and wounded.

20th December.—From the very anxious wish expressed by the commanding officer for the erection of batteries as soon as possible, proceeded down at three o'clock in the morning of the 20th with the six pounders under Lieuts. Gramshaw and Campbell: the pioneers under Lieutenant Baddely, accompanied by three companies of sepoy, and bullocks carrying sandbags, in order to take up a position to cover the erection of the breaching battery. Would have gone down for this purpose early on the evening of the 19th, but was prevented, owing to the hackeries with sandbags being in the rear, and the very great fatigue the men had undergone during that day, in getting the guns up the Heerapore ghaut. Erected a battery for the 6-pounders before daylight, at the top of a hillock in rear of the village of Heerapore, (which had been burnt down the day before by the people of the fort.) Ordered Lieut. Gramshaw to take charge of this battery, and Lieutenant Campbell to return to camp, and bring down the howitzers. Lieutenant Baddely, after erecting the 6-pounder battery, was ordered to proceed and cut materials for fascines, intended for the breaching battery. Employed the whole of the public cattle to bring them in. The situation fixed upon the evening before for the howitzers, proving hard and rocky, and the jungle about not affording proper materials for gabions, the difficulty would have been great, either in driving pickets for a

fascine battery, or in constructing one with sandbags. Changed my original intention, and erected the howitzer battery in rear, under cover of the 6-pounder battery. Withdrew the 6-pounders, and brought in the howitzers by nine o'clock A. M. A number of fascines being at this time reported ready by Lieut. Baddely, prolonged the battery to the left for the 18-pounders, under cover of the howitzers. Ordered down the 18-pounders from camp. The base of the 18-pounder battery (as far as the soles of the embrasures) was of fascines; the remaining part was built of sandbags, from the original 6-pounder battery. Got in the 18-pounders by 12 o'clock, being positively informed that the fort had a ditch ten feet deep, and eight feet wide, filled with water, which I could not ascertain (owing to a bound hedge surrounding the fort.) Proceeded to breach the square bastion in which was the gateway. Preferred this (although I intended at first to breach the curtain), because in breaching the gateway (which was directly opposite the battery), I would bring down more rubbish to fill up the reported ditch, as also with the idea that a passage might lie across the ditch into the gateway, which I generally found to be the case in those forts. Brought down the whole of the outer wall of the square bastion by three o'clock, and continued the fire upon the inner wall. Was a good deal astonished not to perceive daylight through the inner wall, although every shot told, and apparently with great effect. Refused at this time to give any opinion as to the practicability of the breach. Observed the doorway with my glass over the rubbish of the outer wall; fired at it, and continued to fire at the same spot. Several shot went through the door. A hole above the doorway appeared. Part of the wall came down.

“Lieutenant Baddely having gone down with his Subadar within 40 yards of the fort, reported to me that there was no ditch, and that he conceived the breach to be perfectly practicable. The evening advancing fast, I reported to the commanding officer that I had scaling ladders in readiness, and that I believed the breach to be practicable without them, but was certain of its being so with them. I was thus far positive, as I had reason to believe that more shot than one had entered the inner door, which could (if not entirely broken in) be forced

by the pioneers with crowbars, and that could have been done under cover, as they were flanked by the sides of the breaching bastion. Being informed that there would be no storm that day, continued to fire at the breach until about half past four, when I ceased firing. I left Lieutenants Gramshaw and Campbell in the batteries, with orders to keep up a fire at intervals during the night, to keep the breach open. A feeble attack was made upon our outpost in the village during the night, and the people evacuated the fort towards morning, till which time they returned our fire.

“The fort wall was built of masonry, six and half feet thick, about eight feet from the base of the walls. It had eight bastions or towers, and was about 80 yards in length, and 40 in breadth. The battery was nearly 450 yards from the breach, on a rising ground on the outside of the village, which extended from the battery to within 50 yards of the fort.”

Our readers cannot fail to remark the hurried manner in which this little attack was conducted, and the total want of previous reconnoissance. The square bastion of the gateway was fixed upon for the point of attack by the commanding officer of artillery, with a view to its masonry filling up “a ditch filled with water, ten feet deep, and eight feet wide,” which Lieut. Baddeley, upon finally reconnoitring, found did not exist. The slight wall of the curtain might have been with advantage laid open, during the time employed in firing against the bastion.

The following is the report of the attack on Heerapore, made by the Governor General's Agent to Government.

To N. B. EDMONSTONE, Esq. *Secretary to Government in the Secret and Political Department,*

“

Fort William.

SIR,

For the information of the Right Honourable the Governor General in Council, I have the honour to state, that in pursuance of my intention, as stated in my letter of the 18th instant and its enclosures, the detachment marched on the morning of the 19th instant for the fort of Heerapore, and ascended the small but difficult ghaut or pass, therein mentioned. The route, according to my intelligence, proved as difficult as can be conceived; and nothing but the great exertion of the pioneers, animated and encouraged by their officers, Lieuts. Baddely and Faithful, together with the indefatigable exertions of the officers of artillery,

and indeed the zealous labour and great efforts of the whole detachment, could have surmounted the natural obstacles of the road, which may be estimated from the detachment having marched at six o'clock in the morning, and the baggage and rear guard not getting to the ground until some time after dark, the distance only three and half coss.

2. Major Cuppage took every prudent precaution in advancing, by ordering a strong party of 160 men to advance with, and cover the pioneers, and directing the cavalry and baggage to march in the rear, to be prepared for resistance, should any have been offered in passing the defile.

3. The detachment, however, advanced without opposition; nor was there found any of the obstacles which we were informed we might expect, such as trees felled and thrown across the road, &c. On coming within a mile of the place, we found that the people were in the fort, and stated to be to the number of between three and four hundred men.

4. From the difficulty of the road, it was obvious to Major Cuppage that the battering train could not come up in time to do any thing that day. Major Cuppage therefore determined to encamp, and proceed regularly against the place in the morning. A difficulty now arose with respect to water, for there was none that we then knew of nearer than two coss, except what was entirely under the command of the fort; and one man (a bheesty) was wounded in attempting to take up some water. At length I found out, from a man named Maharajee, formerly a servant of Rajah Ram, and well acquainted with the country, that there was a stream under the hills to the southward of the fort, at the distance of half a coss. The fact being ascertained as above stated, Major Cuppage determined on encamping sufficiently near, and between the above stream and the fort, in a very judicious and excellent position.

5. On the first approach of the detachment on the 19th instant, the Killedar set fire to the village of Heerapore, a large and populous village, which burnt all day, and was entirely destroyed by the evening. At three A. M. yesterday morning, Major Cuppage sent a detachment of three companies to take possession of the village with the artillery; and a battery was erected on a rising ground in the village, at an excellent breaching distance. The 18-pounders were got into the battery at 12, and a breach was made at the gateway a little after four P. M. Major Cuppage did not think the breach sufficiently practicable to risk valuable lives by storming; and I was decidedly of the same opinion, and almost certain in my own mind that the garrison would run away in the night. Major Cuppage, therefore, in my opinion very judiciously determined not to storm till by a little more battering the next day, the practicability of the breach should be beyond doubt.

6. The enemy evacuated the place in the night as I expected, and indeed wished; for by their running away, the object of Government

was entirely obtained, and the unnecessary effusion of blood spared. Had the garrison remained, and continued their resistance, the case would have taken a very different turn; and I should have thought it my duty to have pointed out to Major Cuppage the necessity of making a severe example of the rebels, as well for the purpose of deterring others from similar hopeless opposition in future, as for the good effect an example would have had upon the garrison of Adjeegurh.

7. It appears that this fort was held by a person of the name of Chunderbaun, an uncle of the rebel Gopaul Sing, who nominally professed to hold it as the servant of the Rajah Kissery Sing, but in fact had usurped the possession, and retained it in defiance of the Rajah. Of this Chunderbaun, I shall hereafter report more particularly. The fort was defended by his own people, but he was not present himself. Gopaul's family, it is said, left the fort of Heerapore five days ago.

8. The exertions of the pioneers and their officers, and those of Captain Brooke, Lieutenants Gramshaw and Campbell, the Europeans and the lascars of the artillery, in preparing the batteries, and serving and laying the guns, could not be surpassed; and I am convinced that from such zeal, activity, and skill, every thing possible for men to perform may be confidently expected. And though I am not a professional man, truth and justice compel me to notice to His Lordship in Council, exertions and merits of which I was an eye witness. The exertions of Captain Wilson, and the officers and sepoy employed in the trenches, were equally conspicuous.

9. The detachment will move to-morrow towards Murreadur; but from the badness of the road, though stated to be but 10 or 12 coss from hence, we shall not reach it in less than five marches. I am still firm in my belief that Murreadur will be given up, on the approach of the detachment. It however now appears, that the overture of the Killedar to give it up, formerly noticed, was for the purpose of deception and delay, as on the arrival of the party sent to take possession, he desired them to encamp at a distance, and that in six days he would give them possession.

10. I cannot conclude without doing justice to the zeal, continual and judicious attention of Major Cuppage to promote the public service, to complete the objects of the detachment, to preserve the natives from molestation, and in every way to protect their property, and conciliate their regard; nor can I without injustice pass unnoticed the general zeal and activity of the officers, and the orderly, soldierlike behaviour of the troops of the detachment.

I have, &c.

*Camp, Heerapore, }
The 21st Dec. 1808. }*

(Signed) J. RICHARDSON, A. G. G.

P. S. It is with great satisfaction I add, that in this affair only two sepoy were slightly wounded, one in the leg, and one in the hand.

(Signed) J. RICHARDSON, A. G. G.

On the 26th December, Mr. Richardson reported to Government the successful termination of the frontier service, and stated his intention to march with Major Cuppage's detachment to join Colonel Martindell; and on the 29th of the same month, intimated his progress towards Seurah, in order to effect that junction. At this time Mr. Richardson, in his correspondence with Colonel Martindell, strongly advised, that previous to the attack on Adjeegurh, possession should be gained of the fort, or rather fortified house of Durrumpore, about 16 miles N. E. of Adjeegurh, situated between that fortress and Callinger, which belonged of right to Derrea Chowbey, the Killedar of the latter fortress; but had been seized by Lutchmun, being then occupied by Suterject Dowah, one of his relations. Durrumpore, Mr. Richardson stated, formed a very useful depôt of grain to Lutchmun, who also manufactured gunpowder there.

Being of opinion, that the possession of Durrumpore was absolutely necessary as a precautionary measure, not only to secure the Company's territories from the destructive inroads of the garrison (the place being situated between Adjeegurh and the British territories,) but also to prevent our supplies from being cut off or intercepted, Mr. Richardson added, that both from his own intelligence and from the reports of Lieut. Sackville, the acting surveyor of the province, he was informed that Durrumpore might be easily reduced by a detachment, and that this object might be effected while the main force assembling for the siege of Adjeegurh invested or sat down before that fortress; by which double operation, all assistance that might otherwise be afforded from Adjeegurh, would either be cut off or altogether prevented. And on gaining possession of Durrumpore, Mr. Richardson finally argued, that Colonel Martindell would not be obliged to place a detachment in it, as it might then be delivered over to its rightful owner, the Killedar of Callinger.

* On the 30th December 1808, Mr. Richardson requested to be informed by Government how he was to act in the following cases, viz. Should Lutchmun Dowah, on the demand being made for his surrendering Adjeegurh, demur or refuse; but afterwards, on the appearance of the British force, and

their preparations to commence the siege, offer to give up the place before any act of overt hostility on either side.

2dly. Should Lutchmun Dowah, at any stage of the siege after the commencement of hostilities, agree to surrender the fortress.

On the 12th January 1809, Mr. Richardson and Major Cuppage's detachment joined Lieut. Colonel Martindell's force, which then consisted of the following troops, &c. &c.

Cavalry.

3d Regiment Native Cavalry, three squadrons.

Artillery and Trains.

Detachment of European and Native Artillery, under Capt. Brooke.

Ordnance, Siege, . . .	{	4	18-pounders, iron.
		2	12-pounders, iron.
		2	8-inch Howitzers.
			No Mortars.
Ordnance, Field, . . .	{	8	6-pounders, brass.
		2	5½-inch Howitzers, brass.

Infantry.

2d Batt. 1st Native Infantry,	4	Companies.
1st " 3d " "	5	Companies.
1st " 4th " "	3	Companies.
1st " 18th " "		The whole.
2d " 26th " "	5	Companies.
4th Light Battalion, ,,		The whole.

Orders of the day, 12th January.

" The commanding officer, in Bundelcund has sincere pleasure in congratulating Major Cuppage, and the detachment under his command, on their return from a difficult and arduous service, in which the object of Government, for which it was assembled, has been most fully accomplished.

" Lieut. Colonel Martindell requests Major Cuppage will accept himself, and convey to the officers and men under his command, his best thanks.

" To Captain Brooke and Lieut. Baddely, commanding the detachments of artillery and pioneers, every praise is due, for their unremitting exertions in transporting the guns over most difficult roads, a

laborious service, that was seconded and performed by the detachment with a zeal and alacrity highly meritorious to all ranks.

“ The very handsome manner in which Captain Wilson came forward, and volunteered to lead on the storm against the fortress of Heera-pore, has likewise claimed the commanding officer’s particular notice.

“ So many strong holds having fallen into the possession of the detachment, without the loss of any valuable lives, is particularly gratifying, and can only be attributed to the judicious arrangements and decided conduct, which has marked the progress of the detachment throughout.

“ The detachment will march to-morrow by the left. The General to beat at six, and Assembly at seven o’clock. The whole to move off in their present mode of encampment, the cavalry leading, and pioneers in front of the whole. The picquets will form the rear guard until further orders, under the captain commanding the picquets.

“ No baggage is to be allowed to precede the line, excepting officers’ breakfast tents. All other baggage to proceed on the reverse flank.

“ Major Nuthall will be pleased to order a few troopers at the head of the line to enforce this order.

“ On coming to the new ground, the following will be the order of encampment.

FRONT LINE.

Left.

Right.

1 Batt. 18th.—5 Cos. 2 Batt. 26th. Park. 5 Cos. 1 Batt. 3d.—4th Lt. Batt.

REAR LINE, FACING OUTWARDS.

Right.

Centre.

Left.

4 Comps. 2 Batt. 1st.

Cavalry.

3 Comps. 1 Batt. 4th.

“ Captain Brooke will be pleased to attach one six-pounder with its tumbrils, to each corps and detachment forming the front line.

“ The depth between the two lines to be 500 yards, where the ground will admit of it.

“ Quartermaster Serjeants with their camp colours, will attend Lieutenant Wallington at the head of the line.

“ Commandants of corps are requested to see that their encampments are regularly pitched as marked out, and to allow of no deviation.

“ Lieut. Colonel Martindell earnestly enjoins commanding officers of corps to give most particular orders to their men against destroying the cultivation, or offering any molestation to the inhabitants, and requests the same may be explained in their respective bazars.

• “ Captain Brooke, senior officer of artillery, will take the command of the whole of the artillery in camp.”

Colonel Martindell at this time intended eventually to take possession of Durrumpore. The greatest cordiality subsisted between the Colonel and the Governor General’s Agent.

This day a summons, of which the following is a translation, was dispatched by the Agent to the Governor General, on the part of Government, requiring Lutchmun Dowah to surrender Adjeegurh.

Translation of a Letter addressed by Mr. J. Richardson to Lutchmun Dowah, dated Camp Seurah, the 11th, and despatched the 12th January, 1809.

To the brave chief Lutchmun Dowah, health ! Whereas at the period of receiving your Sunnud for the villages included in your Jagheer, you inserted in your Ikrarrameh, that in lieu of the Killadaree of Adjeegurh, for the space of two years, you would pay to the British Government 8000 Rupees ; and that after the expiration of two years from the date of that engagement, you would deliver possession of that fortress to the officers of the British Government ; repeated Perwanahs have accordingly been written to you, requiring the payment of the above mentioned amount, and likewise the payment of the revenues due on account of the Pergunnah of Bechound, which you rented from the British Government. But notwithstanding very great pains were taken to explain, and make you understand the propriety and incumbency of your discharging the above demands, and the same was written, yet you never returned on your part a proper reply to the aforesaid Perwanahs. And notwithstanding all this, the British Government, from a principle of forbearance, thereby adding to its munificence and magnanimity, hoped that you would soon perceive your error, and return to the path of propriety and allegiance ; and therefore no punishment was inflicted, or measures of hardship had recourse to. Now that a period exceeding one month beyond the expiration of your engagement and promise to surrender the fort of Adjeegurh to the British Government has elapsed, I was in hopes that you would have taken your property out of the said fortress, and have given notice thereof to the British Government, and have requested troops to have been sent to receive possession of the fort. But on this point, nothing but inattention and neglect has taken place on your part. I am now returned from having been engaged and employed a few days with a small detachment of British troops in the Pergunnah of Khuttoolah, punishing some refractory and disobedient persons, who, from the fastnesses of their woods, the difficulty of the roads and passes, as well as the fancied inaccessibility of their mountains, puffed up with insolence and pride, had refused obedience to the orders of the British Government to deliver over several places to Rajah Kishore Sing, and Rajah Bidjey Bahadur. After having captured and taken possession of 15 fortresses, I am now arrived at the station of Seurah, and am about to march for the purpose of receiving possession of Adjeegurh,

and that neighbourhood. For this reason, it is now written to you, that you may immediately cause the aforesaid fortress to be evacuated by your people and adherents, and have your property removed from the place, and give notice to the presence of the same, three or four days previous to my arrival in that vicinity, that on my arrival, no sort of delay may have place in the surrender of the fortress.

It is self-evident to all men, that no man of common sense, from an erroneous idea of the strength of a fort (which is but an assemblage of brick and stone, and which before the British power and its troops is like a dwelling built on the sands of the ocean,) would attempt to oppose, or ungratefully disobey so great and magnanimous a Government, which distributes lacs of rupees in estates and donations, for the support of its subjects and adherents, without requiring any thing beyond their obedience and allegiance in return; but especially where the tenor and terms on which possession of estates may be held and continued are perfectly easy, it cannot be imagined that any man of understanding will object to their fulfilment. You brave chief, who have always represented yourself as being cautious and well informed, and always held out that you were an obedient and good subject, having reflected on the whole case and its consequences, will doubtless prove your obedience and allegiance by the surrender of your fort; after which, any requisition or application which you have to make or represent, the same shall be attended to, and whatever may be proper and just on the circumstances of the case shall be done, that you may receive your just right. If, by the deceitful advice or the machinations of any false or evil disposed persons, who may appear ostensibly your friends, but are in secret and in fact your enemies, you forsake the firm path of obedience, and a single sword is drawn, or a matchlock fired, you will publish your infamy and ingratitude to the world, and be for ever notorious for breach of faith. Your Jagheer, which was the means of your support, and would convey your name and the name of your children to posterity, you will give to the winds, and become a wanderer during the remainder of your life, seeking in vain for repose, without a possibility of extrication from your wretchedness. On the contrary, if according to your engagement, you surrender your fort to the British, in conformity to the stipulations of that Government, your Jagheer will remain confirmed and unmolested in your possession.

I am actuated merely by a principle of that humanity which distinguishes the administration of the British Government, and induces it to avoid as much as possible the necessity of destroying any family on chief of the least respectability, to enter thus into a particular exposition of your case; that if, by the false representations and the evil machinations of any flatterer or parasite, you should have let other intentions have a place in your thoughts, you may from this advice remove the cotton of forgetfulness and inattention from your ears, and listen to the voice of truth and friendship. After all this admonition

if you awake not from the sleep of inattention and carelessness, the lives that may be lost, and the evils that may arise to those concerned, or who may chance to suffer, be upon your head.

The Hircarrahs who carry this Purwanah have received orders to remain with you two days for an answer, after which they are commanded to return to the presence. In the event of their not bringing an answer, this circumstance will be considered as a refusal on your part.

Dated the 11th of January, 1809.

The following correspondence took place in camp at Seurah.

TO LIEUT. COLONEL MARTINDELL, *Commanding in Bundlecund.*

SIR,

I have the honour to communicate an extract from a letter (*secret and confidential*) from Mr. Edmonstone, the Secretary to Government in the Secret and Political Department, to the subject of which I request your particular attention.

Camp Seurah,
12th January, 1809. }

I have, &c.

(Signed) J. RICHARDSON, *A. G. G.*

Extract of a Letter (secret and confidential) from Mr. Secretary Edmonstone, dated 3d January, 1809.

In the reports which have been transmitted relative to the arrangements in progress for the preservation of the detachment to be employed against Adjeegurh, no mention is made either of an engineer officer, or of a European force. Possibly both may have been provided for, although not specially reported; but by way of precaution, I am authorized to write to you privately on the subject. The engineer officer whose situation is nearest to Banda, is, I believe, Capt. Robinson, who is now at Allahabad. An application to General St. Leger would of course produce an order for him to join the detachment. General St. Leger also could immediately send a detachment of Europeans. It is of too much importance not to fail in the undertaking, that perhaps no precautionary arrangement should be omitted.

A true extract,

(Signed) J. RICHARDSON, *A. G. G.*

TO CAPT. CASEMENT, *Act. Depy. Adjutant General.*

SIR,

Having received the enclosed communication from Mr. Richardson, Agent to the Honourable the Governor General, I beg leave to solicit, in obedience to the wish of Government therein expressed, that a detachment of three Companies of Europeans, and Capt. Robinson of the Engineers, may be ordered to proceed to Seurah in Bundlecund, with as little delay as possible. I also enclose herewith a copy of my reply to Mr. Richardson's letter of this date, which, together with my requi-

sition, I request you will submit to Major General St. Leger, commanding in the field, as soon after the receipt of this as possible.

I have, &c.

Camp near Seurah,
January 12th, 1809. }

(Signed) G. MARTINDELL,
Lieut. Col. Commanding
Bundelcund.

To J. RICHARDSON, *Esq. Agent to the Honourable the Governor General, &c.*

SIR,

I have the honour to acknowledge the receipt of your letter of this date; and in reply permit me to say, the arrangements for the siege of Adjegurh were not made without having maturely weighed the resources of the enemy, and I beg leave to state, I am confident the detachment now assembled is in every respect adequate to the successful accomplishment of the intended service. But as it appears from your communication just received, that it is the wish of Government a European force, together with an engineer officer, should be employed on this service, I have, notwithstanding my conviction as above expressed, considered it my duty to give this proof of my desire, on all occasions, to conform to the wishes of Government, and have made the necessary application to Major General St. Leger on both points.

I have, &c.

Camp near Seurah,
12th January, 1809. }

(Signed) G. MARTINDELL,
Lt. Col. Commanding in
Bundelcund.

Orders of the day. January 13

" The detachment will march to morrow, in columns of subdivision, by the right.

" The general will beat at six, and assembly at seven o'clock.

" The cavalry and pioneers will move up to the right, a quarter of an hour before assembly beating.

" The detachments 2d Battalion 1st, and 1st Battalion 4th, will at the same time join the rear of the front line. On marching days, the picquets will mount immediately on coming to the ground. Those of the front line will assemble in front of the park, and those of the rear line in front of the detachment furnishing them. The ammunition of corps will proceed on the reverse flank of their respective corps, under charge of a careful non-commissioned officer and four sepoy's, who are not to allow it to fall in the rear.

" All picquets are to be withdrawn half an hour after general beating, and assemble in the centre of the two lines.

" The 1th Light Battalion picquet will join the cavalry in the morning on the right of the line, a quarter of an hour before assembly beating.

" Commanding officers of corps are requested to observe their proper distances from the leading corps. In the event of any obstacles

retarding any part of the line, the officers commanding corps, where it occurs, will order the long roll to be beat, which is to be repeated by every corps in the line. Those in front are to halt, and those in the rear are to close up. When the obstacle is removed, the taps will be the signal to move again.

“After orders, the detachment will halt to-morrow.

“On halting days, the picquets will mount at eight o'clock every morning.

Orders of the day. January 14, 1809.

“The detachment will march to-morrow by the right, in the same manner as detailed in yesterday's orders.

“The general will beat at six, and assembly at seven o'clock.

“On coming to the ground, the 3d Cavalry will furnish, until further orders, a picquet under a Subaltern Officer, one Native Commissioned Officer, two Havildars, two Naicks, and thirty Troopers.

“A drummer from the 2d Battalion 1st Regiment is to be sent this evening to the park, and will be relieved weekly.

“Whenever the drum beats for orders, it is to be taken up by the corps in the line.

“All orders sent in circulation are to be signed ‘Seen,’ and the time noticed likewise.

Orders of the day. January 15.

“The detachment will march to-morrow morning, moving by the left, in the following order.

“The 3d Regiment Cavalry, and two companies Light Battalion leading, will form the advanced guard.

“The 1st Battalion 18th, 2d Battalion 26th, Park, Division 1st Battalion 3d, 4th Light Battalion, Division 1st 4th, and 2d Battalion 1st.

“The several corps will take their position in column, a quarter of an hour before assembly beating.

“All baggage to be loaded, and ready to move off with the line, on the reverse flank. No baggage whatever to precede the line.”

“The general will beat at six, and assembly at seven o'clock.”

The detachment halted on the 16th, 17th, 18th, and 19th, and arrangements were made to facilitate bazar supplies.

On the 19th January, three companies of His Majesty's 53d Regiment of Foot marched from Cawnpore to join Colonel Martindell's force; and Lieutenant Robertson of Engineers was ordered from Allahabad to join the detachment. Lieut. Colonel Martindell on the same day addressed Mr. Richardson, stating his reasons for thinking that the taking possession of Durrumpore should be suspended until the fall of Adjeegurh. These were as follows.

1st. That the information received from the Acting Adjutant General was of such a nature, that he considered it of the utmost importance to obtain possession of Adjceegurh as soon as possible, that the force in Bundelcund might be free to act in any other quarter where its services might be required.

2dly. That on the fall of Adjceegurh, all the other places belonging to, or in alliance with Lutchmun, would in all probability either be surrendered, on being summoned, or be evacuated, on the approach of the detachment.

3dly. That if Durrumpore were taken before Adjceegurh, the Killedar and garrison would probably make their escape into the latter, and thereby add considerably to the strength of its garrison.

4thly. That Sutter Jeet and Pahar Sing, the possessors of Durrumpore, were related to Lutchmun Dowah's family, and would be more zealous in the defence of Adjceegurh than any, if not the whole of the Sirdars' in the latter place.

5thly. That in case the garrison of Durrumpore resisted, both officers and men might be disabled, which would diminish the strength of the British force, while the garrison of Adjceegurh would be increased by the escape of that from Durrumpore.

Orders of the day. January 21.

The detachment will march to-morrow by the left, in the following order.

"The 3d Cavalry and the companies Light Battalion leading, will form the advanced guard.

"The 1st Battalion 18th, 2d Battalion 26th, Park, Division 1st Battalion 3d, 4th Light Battalion, Division 1st 4th, and 2d Battalion 1st Regiment.

"The several corps and divisions are directed to take up their position in column, a quarter of an hour before assembly beating, that the whole may be ready to move off at once.

"The general will beat at six, and assembly at seven o'clock.

"Captain Brooke will direct a morning and evening gun to be fired from the park, until further orders."

Orders of the day. January 21.

Officers are requested not to go beyond the picquets, until further orders.

"Any men coming into the commanding officer, are to be passed at the picquets without interrogation, and an escort to accompany them to head quarters.

“Each corps will furnish an inline piquet, to mount every evening at sunset, of the same strength as their outline piquets.

“The detachment will march to-morrow by the left, at the same hour and in the same order as to-day.

“The commanding officer having observed a considerable break in the line of march this morning, calls upon commandants of corps to pay more particular attention to the orders on that head issued on the 13th instant.

“No private hackeries or baggage whatever is to be allowed to mix with the hackeries and ammunition waggons belonging to the park.”

On the 21st January, Mr. Richardson transmitted to Government a copy of Lutchmun Dowah's reply to the formal demand of the surrender of the fortress of Adjeegurh*, which was deemed so equivocal and evasive by the Governor General's Agent, as to be considered tantamount to a refusal; in consequence of which, he had, on the 16th, sent an answer†:

* *Translation of a Letter from Lutchmun Dowah, dated the 12th of Mang Sumbut 1865, to Mr. J. Richardson, Agent to the Governor General.*

Your letter came, and the contents are understood. With regard to the fort business, respecting which you have written Sir, formerly, at the period at which the treaty appertaining to this matter was written and entered into, Captain John Baillie said: “that after the expiration of two years, I will not take the fort from you; at present write these words, and afterwards I will get the fort confirmed to you,—just now act according to my wishes.” For the above reasons I wrote. You, Sir, may enquire and ascertain the truth of this statement from Captain Baillie. My keeping possession of the fort, you will consider it the same as if garrisoned by the British Government. I retain the possession by your orders, Sir. Previous to this, I despatched to you Lalla Rakeen; he will have represented circumstances. I now send Patirah Sen, and Koer Juggut Sing. You will understand all circumstances from their representation.

(A true translation,)

‘ (Signed) J. RICHARDSON, A. G. G.

† *The translation of a letter from Mr. J. Richardson, Agent to the Governor General, to Lutchmun Dowah, dated the 16th January, 1869.*

To the brave Lutchmun Sing, health. Your letter of the 12th of the month of Mang 1216 Fuzillee 1865 Sumbut, in reply to the Perwannaff of the presence, requiring the delivery up of the fort of Adjeegurh, has been received. That which you have written, that at the time of entering into the treaty, stipulating that you would surrender the aforesaid fortress, Captain John Baillie, the former Agent to the Governor General, promised verbally, that even after the expiration of two years, the

and addressed Lieutenant Colonel Martindell, requesting him to pursue such military and coercive measures as might be best calculated to obtain possession of the fortress, to destroy the power of Lutchmun Dowah, and to effect the resumption of his lands. Mr. Richardson added, that he only waited to despatch his final answer to Lutchmun Dowah, until he should know whether the state of supplies in camp would enable the Lieutenant Colonel to march the next day.

Mr. Richardson also sent to Government a copy of his admonition to Deriah Sing Choby, Killedar of Callinger, on his having heard of negotiations, and of a treaty of amity having been prepared, and being on the point of conclusion between him and Lutchmun Dowah. The re-

said fortress would be allowed to remain in your possession. This pretence is a plain and inadmissible deceit, and an unfounded imputation on the gentleman in question, because it is impossible that that gentleman could ever have made such a promise, contrary to the orders of the British Government. If, in fact, the aforesaid ever had made such an engagement, the same would indubitably have been inserted, and would appear in your "Wajib Ul Urzee:" and you who consider yourself a man of knowledge and prudence, how is it possible, that in return for a written engagement, you should receive a verbal promise? For these reasons, it is plainly evident, that under these unfounded pretences, you cover your direct refusal to comply with the terms of the treaty. I therefore consider your reply as a direct and unequivocal refusal to fulfil the stipulation of the treaty you have entered into with the British Government; and in consequence, I shall shortly arrive in the neighbourhood, for the express purpose of taking the fort of Adjeegurh. If, on my arrival, your troops or yourself shall make any demur or opposition to the surrender of the said fortress, they shall be punished by the British arms, and the fortress captured by force; and in consequence of this rebellious and ungrateful conduct, the whole of the territories granted you by the British Government shall be confiscated and resumed, and whatever persons may secretly or avowedly assist, or shall as your servants oppose the British Government, their families and adherents shall be seized and punished. In reply to that which you have further written, that "Rakeen," a Vakeel who was sent formerly, together with Juggut Sing, are now despatched, I now inform you, that without your having first agreed to surrender the fortress of Adjeegurh, the representations of your Vakeels cannot be listened to. What more can I write?

(A true translation.)

(Signed) J. RICHARDSON, A. G. G.

ply to which was entirely satisfactory, and accorded with Mr. Richardson's private information, in which he had much faith, exclusive of the conclusions he drew from his knowledge of the cause of hatred and distrust which existed on the part of the Killedar of Callinger, and the obvious interest he had in getting rid of so troublesome a neighbour as Lutchmun Sing was.

Mr. Richardson concluded this communication by informing Government, that next day (the 22d January,) it was Lieut. Colonel Martindell's intention to move forward, and take up an eligible position within a proper distance of the fort, for the immediate commencement of operations. Lieut. Colonel Martindell was, however, induced to alter his determination of marching on the 22d to Adjeegurh, from finding that a strong body of Lutchmun Dōwah's troops, consisting of upwards of 500 chosen men, under Sirdar Sing, his Kass Kullum, and Adjudah Persaud, both brave, and attached adherents of Lutchmun, the latter his near relation, had occupied some small hills near a village called Ragowly, about two miles in front of the British camp, and a little to the right of the road leading to Adjeegurh. Aware of the danger of leaving so strong a post in his rear, and in order to strike terror by a determined and decisive attack, Lieut. Colonel Martindell made the following arrangements for attacking it.

January 22, 1809.—About 12 at noon, orders were issued to prepare two 6-pounders and a howitzer for immediate service, and half an hour afterwards, another 6 pounder was ordered. The last 6-pounder, under Lieut. McLeod, was detached with four companies of the 4th Light Battalion, who proceeded under Major Kelly, round the north-east point of the Ragowly hills. The other two 6-pounders and the howitzer, with Captain Brooke and Lieutenants Gramshaw and Campbell, proceeded by the high road in front of the battalion companies of the 1st Battalion 18th Regiment, which marched in open column under Lieut. Colonel Lawtie towards the S. E. point of the hill, on which the village of Ragowly was situated. Four companies of the 2d Battalion of the 1st N. I. and the grenadier companies of the 1st Battalion of the 18th N. I. followed in the same track, to attack the flank of the enemy's post on the Ragowly hill. On the 1st Battalion

18th nearing the village, Lieut. McLeod's 6-pounder was heard to open on the north-west angle of the village; and at the same time the reserve, consisting of three troops of the 3d Cavalry, and four companies of the 1st Regiment N. I. made their appearance round the hill, moving in the direction which the 1st Battalion of the 18th had observed. The companies of the Light Battalion, and the 1st Batt. 18th, having now come round opposite the village of Ragowly, and nearly formed a junction, the 6-pounders which accompanied the 18th were opened on the N. E. of the hill above the village. A party of pioneers under Lieut. Baddely, accompanied the artillery with this detachment, and were very useful in cutting the soil from below the trails of the guns, to enable their being sufficiently elevated to command a fire upon the upper part of the hill. While the 6-pounders were keeping up a fire upon the Bondeclahs, Lieut. Colonel Lawrie detached six companies of the 18th N. I. to ascend by the centre zigzag pathway, and Major Kelly at the same time ordered two companies of the Light Battalion to ascend the right point of the hill, under a rudely fortified stone bastion. Lieut. Baddely, with his pioneers, volunteered to accompany this attack. The other two companies of the Light Battalion ascended the hill at the same time, and in the same place as the 18th. One company of the 18th had previously been sent to attack the hill in the rear, as also three companies of the 1st Regiment. On the opening of the 6-pounder under Lieut. McLeod, the enemy retreated from the village up the hill, being entirely surrounded by our troops, ten companies attacking them in front with three 6-pounders playing upon them in different directions, wherever they appeared. Four companies in their rear, and three troops of cavalry scouring the bottom of the hill at a hand gallop, they were driven to desperation. Having no means of escape left open, the enemy fired in all directions from behind stones and holes in the rocks; but were successively driven out of their hiding places, as our men advanced. The pathway up the hill was a small rugged narrow ravine, so that the attacking parties could shew no extent of front, and necessarily advanced in a very straggling manner. Those in the rear being unable to move on, were obliged to content themselves with seeking out other passages for ascent, and looking

out for the hiding holes of the enemy. As the column of attack advanced, the guns were ordered to cease firing, under an apprehension that the splinters from the rocks might injure our own people. The enemy fought bravely. Many were blown up, as usual, by the explosion of their own powder-horns. They assembled on the summit of the hill, and maintained a cross fire from two positions at each end of the hill, which were encircled by rocks and loose stone parapets, the materials of which they hurled with great fury upon the assailing parties, when their matchlock ammunition was expended. Several of our officers and men attempted to get over these parapets, but were immediately shot from the loop-holes, or cut down. After a contest of more than three hours, our troops having gained the top of the narrow ridge between the enemy's two positions, exposed to a severe cross fire from the two little fortified bastions, many of the enemy being killed, and the sun near setting, Colonel Martindell ordered the retreat to be sounded from the bugles. Orders were immediately given by Lieutenant Colonel Lawtie to open the 6-pounders and howitzers to cover the retreat; upon which Captain Brooke represented, that great danger would attend the opening of howitzers, in as much as, should their shells fall over, or short of the small bastions on the summit of the hill, they might burst immediately upon our own troops; but he was directed to fire at all events*, as nothing but a heavy cannonade could secure the retreat of the troops. After firing a shell, (the fuze of which was wrapped round with waxcloth,) to ascertain the distance, the howitzer opened, and the shells, beyond expectation, fell in the centre of the right bastion, the effects of which must have been dreadful. The enemy's chief, Adjulah Pursaud, was killed by a 6-pound shot, after having been wounded by a musquet ball.

As many of the killed and wounded of our own troops as could be collected, were brought down, under the fire of the guns, about sunset, by the retreating parties, and every attention paid to them.

In the above action, 140 of the British troops were killed and wounded. Lieutenant Jamieson died of his wounds, and

* This was countermanded by Colonel Martindell, as soon as perceived.

Lieut. Fry lost his arm. The officers wounded were Lieuts. Jamieson, Fry, and Speck.

The great fault committed on this occasion seems to have been that of driving the enemy to the necessity of desperately defending their little fieldwork, by leaving them no path for escape. Had any road to the plain been left open, they would in all probability have attempted a retreat, and might then have been taken prisoners, or cut up by the cavalry.

The camp about two miles distant was ordered to be struck, and the detachment encamped in considerable confusion after dark, about 1000 yards from the enemy on the hill. The enemy, after burning several of their dead, and conveying away a portion of their wounded, deserted the hill during the night.

On the 23d of January, Lieut. Colonel Martindell addressed the following despatch to the Adjutant-General of the army.

To LIEUT. COLONEL WORSLEY, Adjutant General, Bengal Army.

SIR,

I have the honour to acquaint you, for the information of his Excellency the Commander in Chief, that yesterday at noon I directed four companies of the 4th Light Battalion, with a six-pounder, to take a sweep to the north east of some hills situated in my front, and occupied by a body of Bondelahs, under a chief named Adjudiah Parsaud, uncle to Lutchmun Sing, in number about 500, in flank, whilst two six-pounders and a howitzer under Captain Brooke, protected by the 1st Battalion 18th Regiment, marched down by the high road to attack them in front, and four companies of the 2d Battalion 1st, and the grenadiers of the 1st Battalion 18th, moved at the same time to attack them on the right. These hills are of great height, and can only be ascended by narrow pathways running in a kind of traverse or zigzag, and at every 20 yards were strong posts behind large rocks, each sufficient to contain 20 men; and as these posts commanded the paths, from behind which the enemy could securely fire at our men as they advanced, his Excellency will, I trust, bestow his approbation on those gallant fellows, who forced these posts successively, and drove the enemy to the top of the hills, where they had erected parapet walls, which they ascended by ladders, drawing them up after them, and behind which they made a steady resistance, hurling large stones upon our assailants, and directing a heavy fire of matchlocks.

At it was impossible to carry ladders up such a stupendous rugged height, the men almost exhausted from fatigue and want of water, and evening approaching, after an action of three hours and a half, during which time every foot of ground was disputed, I deemed it prudent

to recall the men, with an intention of renewing the attack this morning, for which purpose I removed my camp in the evening to this ground.

The enemy, however, fled at two o'clock this morning, leaving their chief, Adjudah Persaud, with about 60 killed, amongst whom were nearly 21 sirdars, and a number wounded. The attack was conducted by Lieut. Colonel Lawtie under my orders; and I have no hesitation in declaring, that in the course of my service, I never saw men behave with more cool and determined resolution than the officers and men employed in this arduous service, under as close and heavy a fire as ever I witnessed, which his Excellency will perceive by the enclosed return of killed and wounded.

I deem it my duty, Sir, to recommend to the particular notice of his Excellency, Lieut. Colonel Lawtie, who commanded the attack; Captain Brooke of the artillery, under whose judicious and well directed fire our men advanced to the storm; Major Kelly, of the 4th Light Battalion; Captain Midwinter, 2d of the 1st; and Lieut. Baddely, who volunteered his services with a party of pioneers; and in short every officer and man, whose exertions and gallantry may be equalled, but could not be surpassed.

In detailing the meritorious exertions of the men employed on this arduous service, it would be an injustice to my personal Staff Brigade Major Grant, did I not acquaint his Excellency that I feel much indebted to this officer, for the zeal and gallantry he evinced on this, and indeed on every other occasion, since the command of this province has devolved on me.

It was my intention to have taken up my ground before Adjeegurh to-day; but want of conveyances for the wounded, has obliged me to halt till to-morrow.

I have, &c.

(Signed) G. MARTINDELL,

Camp at Ragourly,
January 27, 1809. }

Lieut. Col. Comd. the Detachment.

P. S. In speaking of individual merit, I omitted to mention that of Captain Wilson, 2d Battalion 26th, who although no part of his corps was ordered to the assault, volunteered his services, and accompanied Lieut. Colonel Lawtie as his staff, in which situation he distinguished himself with much zeal and gallantry.

Return of the Killed and Wounded, in the Assault of the fortified Hills of Ragorely, 22d January, 1809.

CORPS.	Killed.						Wounded.					
	Subaltern.	Subadars.	Jamedars.	Havildars.	Naicks.	Drummers.	Subaltern.	Subadars.	Jamedars.	Havildars.	Naicks.	Bleesteers.
Four companies 4th Light Battalion, . . . . .	..	..	..	..	..	10	2	1..	1	2	..	21
Four companies 2d Battalion 1st N. I. . . . .	..	..	..	1	..	3	1	..	2	1..	..	18
1st Battalion 18th Regiment N. I. . . . .	..	..	..	..	3	10	..	1	1	2	3	25
Pioneers, . . . . .	..	..	..	..	..	1	..	..	..	..	..	4
Total					1	24	3	2	3	4	5	296
Grand Total	28 killed.						115 wounded.					

Officers Wounded. Lieutenants Jamieson and Fry, 4th Light Battalion, severely. Ensign Speck, 2d Battalion 1st Regiment.

(Signed) P. GRANT, M. B.

Extract from the Proceedings of the Right Honourable the Governor General in Council, in the Political Department, under date the 6th March, 1806.

The Right Honourable the Governor General in Council, having received the official advices of the final accomplishment of the object of the detachment lately employed in Bundelcund, under the command of Lieut. Colonel Martindell, by the surrender of the fortress of Adjeegurh, deems it proper to direct the publication of the following copies of letters from the Governor General's Agent in Bundelcund, and from Lieut. Colonel Martindell, to the address of the Adjutant General, containing reports of the operations of the detachment, and at the same time to express the sentiments of approbation and applause with which his Lordship in Council contemplates the professional skill, judgment, and ability displayed by Lieut. Colonel Martindell, in regulating the operations of the detachment, and of the zeal and exertion which have distinguished the conduct of the officers and men under his command.

To N. B. EDMONSTONE, Esq. *Secretary to Government in the Secret and Political Department.*

SIR,

My despatch of the 25th instant stated, that it was Lieut. Colonel Martindell's intention to move forward to within about a coss of Adjeegurh the next day, there to determine upon and take up the most expedient position for the commencement of the siege.

2. Lieut. Colonel Martindell was induced to alter his determination, in my opinion very properly, from finding that a very strong post on a

hill near a small village called Ragowly, about two miles in front of our camp, and a little to the right on our way to Adjeegurh, which was occupied by Sirdar Sing Khass Kullum, and Adjudiah Pursaud, a near relation of Lutchmun Dowah, and some of his chosen troops, had been greatly strengthened, and amounted to the number of 500 men and upwards, commanded by the above mentioned Sirdars, estimated by Lutchmun as amongst the most attached and bravest of his adherents.

3. Lieut. Colonel Martindell having certain intelligence of the above, which all my information corroborated, and being aware of the danger of leaving these active and attached partizans in our rear, to issue from their stronghold at pleasure, for the purpose of cutting off our supplies or plundering the villages in the internal territories of Government.

4. For the above reasons, and to strike terror by a determined and decisive attack, Colonel Martindell determined to halt that day, and dislodging the enemy previous to the detachment's advancing; in which determination, as a military precaution rendered necessary by circumstances, I agreed. Colonel Martindell, in pursuance of his determination, proceeded himself, with his staff Brigade Major Grant, this afternoon with the troops destined for the enterprize.

5. Not having accompanied Colonel Martindell, and not having been an eyewitness of the attack, I beg leave to refer the Right Honourable the Governor General in Council to No. 1. Lieut. Colonel Martindell's report of the attack to the Adjutant General, of which Lieut. Colonel Martindell has furnished me with a copy.

6. The gallantry of the attack, and the perseverance with which it was kept up under a determined resistance excited by despair, and rendered insurmountable by natural obstacles, could not possibly be exceeded, either in officers or men. The casualties, much as they are to be lamented, are by no means what might have been expected from the resistance, the nature of the obstacles, or the persevering continuance of a close attack, upon an enemy sheltered behind rocks and breast-works.

7. The loss of the rebels has been great: 60 have been ascertained to have been killed, and their bodies found amongst the killed. It has been ascertained Pursaud is one. This sirdar was Lutchmun Dowah's near relation, and a man on which he placed great dependance, and whose loss will by all accounts much embarrass his affairs. At a moderate estimation, nearly treble the number of wounded compared to the slain, may be reckoned. Indeed my intelligence from Adjeegurh states, that the report made to Lutchmun Dowah was 60 or 70, including Adjudiah Pursaud killed, and 150 or 160 wounded.

8. The above intelligence, in which I have faith, makes the number of this body considerably greater than mentioned in the former part of this letter; and states, that the intention with which they were posted in this uncommonly strong hold, was from considering the post invulnerable; that this body, who were all chosen troops, should sally out in our rear when we advanced, cut off our supplies, and spread devasta-

tion and plunder amongst our internal territories, to the interruption and loss of our revenues.

9. The consequences of this gallant, and in my judgment necessary attack, it will be obvious to the Right Honourable the Governor General in Council, have been highly beneficial, and will, I am confident, ultimately tend to accelerate the fall of Adjeegurh.

10. It would be presumption in me to mention individuals, or to point out particular instances of extraordinary merit, where the zeal and intrepidity of all were eminently conspicuous. On the professional merit and unexampled exertions of the gallant parties concerned, both officers and men, in this brave attack, the testimony of the commanding officer is conclusive.

11. I take the liberty of adding, before I conclude this letter, that I am convinced that the storm of Adjeegurh, or almost any fortress, could not present the difficulties that were encountered, and in many instances surmounted, in the attack of the hill yesterday; and I am perfectly confident, that under Colonel Martindell's skill and experience, his assiduous and unremitting zeal, and the gallantry of the brave troops under his command, the capture of Adjeegurh will not prove a very difficult achievement, or be long protracted.

I have, &c.

*Camp at Ragowly, }
the 23d Jan. 1809. }*

(Signed) J. RICHARDSON, A. G. G.

P S. I am extremely sorry to state, that Lieut. Fry had his left arm amputated this morning; and that Lieut. Jamieson is so severely wounded through both thighs, as to occasion great doubts of his recovery.

(Signed) J. RICHARDSON, A. G. G.

January 24. 1809.—Lieut. Colonel Dauvergne's detachment, which was employed in the rear, securing supplies, having arrived, agreeably to order, at Ragowly, about 8 A. M. from Pokarric, Lieut. Colonel Martindell delivered over the wounded to that officer's care, and marched with his own force at 10, passing unmolested through a very strong country, covered with jungle. The detachment took up a position 2.200 yards from the east face of the hill of Adjeegurh, on a fine plain, with a stream of water in rear of the camp.

Orders of the day. January 25, 1809.

The commanding officer regrets, that from a great press of public business, he has so long been detained from the performance of a most pleasing part of his duty,—to return his best thanks, so justly due to the whole of the troops who were employed on the assault of the fortified hill of Ragowly on the 22d instant, and to express his entire sa-

tisfaction at the gallant conduct and zeal displayed by them on that occasion.

The promptitude with which the troops proceeded to the attack, the persevering toil with which they encountered opposing obstacles, the intrepidity with which they ascended the hill, under a most galling fire, and the steady courage which they displayed in the assault of so strong a position, so obstinately defended, are circumstances which call for the most unqualified admiration, and justly entitle them to his warmest approbation and praise.

To Lieut. Colonel Lawtie, who commanded the assault, to Majors Kelly and O'Halloran, and to Captains Hair and Midwinter, who conducted the principal columns of attack, and to Lieut. Baddely, who volunteered with a party of pioneers, the commanding officer feels himself most deeply indebted, for their gallantry and conduct, and equally so to every officer and soldier employed, for the persevering zeal and bravery they so conspicuously displayed, while the skill with which Captain Brooke and his officers directed the fire of the artillery to cover the troops in the assault, claim the highest approbation. To Captain Wilson, who likewise volunteered his services, with Lieut. Colonel Lawtie during the action, every praise is due.

Although Major Nuthall, with the 3d Regiment of Cavalry under his command, could not from the nature of the assault, with the exception of the gallopers attached to his corps under Lieut. Barlow, be employed otherwise than as a covering party to the assailants, still the commanding officer feels much indebted to him and his corps, for the zeal and alacrity with which every position was taken up; and to Lieut. Barlow and men attached to the gallopers, for his well directed fire in covering the right attack.

It is not without regret, the commanding officer, in appreciating the importance and successful issue of the assault, laments the loss of the brave men who fell so gloriously in the cause, in which they have so nobly sustained the honor and name of the Bengal army.

The commanding officer has already had the pleasure of reporting the meritorious exertions of the troops to his Excellency the Commander in Chief; and requests Lieut. Colonel Lawtie, commanding 1st Battalion 18th; Major Kelly, commanding 4th Light Battalion; Captain Midwinter, commanding detachment 2d Battalion 1st Regiment; Captain Brooke, commanding the Artillery; Major Nuthall, commanding the 3d Cavalry; and Lieut. Baddely, commanding the Pioneers, will explain to their native officers and men his marked and entire approbation of their conduct.

To LIEUT. COLONEL H. WORSLEY, Adjutant General, Bengal Army.

SIR,

I have to request you will do me the honour of submitting, for the perusal of his Excellency the Commander in Chief, the accompanying copy of my order after the gallant assault of the fortified hill of Ra-

gously. That praise so justly due to their meritorious exertions, has been a most pleasant part of my duty to acknowledge, in terms of gratitude, I owe to every officer and soldier employed, and which I rest assured will meet his Excellency's approval.

In my report to you, Sir, of this action, it is not without some regret I find I had omitted to insert Captain O'Halloran's name among those who led on one of the principal columns of attack. I feel more particularly this omission, as Lieut. Colonel Lawtie, after my despatch, in speaking of individual merit, noticed in the strongest terms, the very gallant and intrepid manner in which Captain O'Halloran led on the 1st Battalion 18th, and the very animated example with which he encouraged his men throughout the assault. When the conduct of every officer and man is equally marked for gallantry, in speaking of individual merit, I do not underrate the conduct of others. Personal judgment, example, and discretion, are more essential in the leader; and as Captain O'Halloran was placed in that situation, from the absence of his senior officer Major Vanrenan, (who was field officer of the day, and whom I left in charge of the camp,) and who as zealously discharged his duty as such, I deem it incumbent on me to thus particularly notice his conduct, for the further approbation of his Excellency the Commander in Chief.

I am, &c.

.(Signed) G. MARTINDELL,

*Camp before Adjeegurh, }
27th January, 1809. }*

Lieut. Col. Commanding Bundelcund.

Mr. Richardson, in a letter to Government this day, stated that none of the rebels had offered any molestation since the arrival of the troops, nor had a single gun or matchlock been fired from the fort.

"Notwithstanding which," he adds, "I have no reason to believe, from the best intelligence I have received, that Lutchinun Dowah means to give up the fort.

"My private intelligence is, that he is determined to make the best resistance he can in the fort, where he now means to remain himself. He had at one time determined otherwise, and meant to have left the fort, to be defended by his son, and a confidential servant named Takoor Doss, and to have tried what he could effect by plundering our villages, and intercepting our supplies; but he has abandoned this resolution, from seeing the fate of his relation, Adjudiah Pursaud, and from finding that he has been unable to obtain any assistance, as well as from the fear of treachery among his people, should he absent himself."

The following is a copy of the memorandum of intelligence furnished this day to Colonel Martindell by Mr. Richardson.

To LIEUT. COLONEL MARTINDELL, *Commanding in Bundelcund,*
Camp before Adjeegurh.

MEMORANDUM.—Secret intelligence respecting the best mode of attacking Adjeegurh, as collected and furnished to Lieut. Colonel Martindell by Mr. J. Richardson, A. G. G.

The best position for the troops, is represented to be on the banks of the Nullah called Deo Gawn. From thence the fort is about two miles. The batteries, it is stated, would be best erected on the hill opposite the great gateway to the northwest of the fort. On the above hill, it is represented, Ally Bahadur got his gun or guns when the fort surrendered to him. A detachment, it is stated, would be of great use, if left to the eastward of the fort, opposite the Tirwan Darwazah, as it would interrupt supplies, and cut off all intercourse by that way between the country and besiegers.

The wall of the fort to the southward is on a high hill; which, however, is represented as not being by any means inaccessible. The height of the wall at this place is stated to be only ten cubits, or fifteen feet; and it is said to be practicable to place ladders at this point, to enter the fortress by a secret and well conducted attack, by escalade.

The practicability of the ascent to the part of the fort above described, can be, as stated, best examined from the top of Bisram Gunge Ghaut.

At the ground mentioned as the best position for the troops, it is stated that water is obtained three or four cubits from the surface of the earth.

The above I deem it my duty to lay before you, and shall be happy if it proves of any use.

(Signed) J. RICHARDSON,
 A. G. G.

Camp before Adjeegurh, }
January 25th, 1809. }

25th, 26th, and 27th January.—On these days the fortress was reconnoitred, in order to ascertain the most assailable point. The reconnoissance took place at a great distance from the fort, principally from the shoulders of the hill to the N. E. of the fort, opposite to Rada Tonga, the spot opposite to which appeared to the officer commanding the artillery a favourable point of attack, particularly for escalade; but as it was impossible at that distance to ascertain the height of the rocks immediately under that part of the fort, the extreme height of Rada Tonga interrupting the view, and the thick and apparently impenetrable jungle underneath preventing all approach; and as it was not ascertained whether there was any base between the object of attack, and the opposite hill of Rada Tonga, which could have received the rubbish of a breach as it fell, in

case this part of the fort was attacked. And as from the best measurement, made without proper instruments*, (having only the gun quadrants to take angles†,) this point of the rock was supposed to be 45 feet in perpendicular height, from the foundation of the works to where the hill fell off to a gradual slope†, the rock appearing to be of a slaty stone, mixed with clay, and looking as if it were perpendicularly scarped by art. And finally, although it was erroneously imagined by some, that the rock might possibly have been breached from the shoulder of the N. E. hill; yet as it was supposed this operation would have required an immense expenditure of ammunition. the plan was abandoned.

On the 27th, one of Lieut. Colonel Martindell's Hircarralis having, at the request of a subaltern officer of artillery present with the reconnoitring party, conducted him and another officer of the same corps. by a very small, narrow, and dangerous foot-path, up to the top of the N. E. hill; which commanded a fine view of the interior of the fort, of the gateway, and hill on the N. W. point, a sketch of the view was taken, and sent to Colonel Martindell, then on the shoulder of the N. E. hill, on receipt of which the whole of the reconnoitring party ascended, and it was immediately determined to attack the fort by the N. W. or principal gateway; for it was observed, that although the rocky scarp which continued all round the fort. was in most places about 100 feet in perpendicular height, yet that this obstacle existed only partially at the N. W. gateway; and there being much masonry at that point. it was hoped that a practicable road might be effected into the body of the place by breaching this point. The pioneers were accordingly occupied in collecting materials for gabions and fascines.

* Vertical angles were taken, by holding the plane of the gun quadrant perpendicular to the horizon, and looking along the short leg with the right angle next the eye, bringing this leg in a line with the object; then by another observer moving the spirit level until it was parallel with the horizon. The number of degrees between that and the short leg gave the angle required, but gave it very inaccurately, the rough nature of the instrument, and the smallness of the angle, all tending to occasion error.

† After the siege, this point, by actual measurement, was found to be 140 feet in perpendicular height.

28th January.—The detachment this day changed ground, and marching round the N. E. hill, which lay on the left of the route, took up a position to the north of the fort, on the banks of a petty stream called the Deogawn Nullah, clear of the jungle which surrounded the fort, and prevented nearer approach. The camp, owing to the surrounding jungle, was necessarily pitched at a great distance from the gateway proposed to be attacked, which was the cause of much inconvenience in the course of subsequent operations; but this could not be avoided.

The summit of the hill opposite the N. W. gateway, formed a narrow irregular ridge, considerably lower than, and gradually sinking from the fort, and as gradually rising towards its own summit, which was fortified by a rude stone redoubt; the highest point of the hill being about 460 yards distant from the works of the gateway. The possession of this hill was considered by the officer commanding the artillery absolutely necessary; for even if it should not be used as a site for batteries, yet the enemy, by keeping possession of it, were enabled to prevent the advance on either side of batteries on the plain sufficiently near to breach, it being impossible to approach within breaching distance on the plain without leaving one flank open to this hill.

Major Brooke states, that the commanding officer being inclined to commence the attack on the plain to the north east of the hill, went down during the day to fix on a situation for the batteries; and a spot was met with, which Captain Brooke states, was in Colonel Martindell's judgment, very eligible for that purpose, and appeared equally so to him, as commanding the artillery, *excepting in regard to its distance from the fort*, which Captain Brooke in his final report to Colonel Horsford, (then commanding the artillery in Bengal,) represents, he considered, to be too great for the guns to have the desired effect*. We must here observe, that the height of the hill (above 800 feet) deceived every observer's eye exceedingly. The fort, from its great height, appeared almost as it were hanging over the

* We do not think that the late Major Brooke represented this view of the case to Colonel Martindell, before establishing the batteries on this site.—Ed.

reconnoitring party. The want of a theodolite was seriously felt. To Colonel Martindell's anxiety to commence operations, the officer commanding the artillery attributes his resolving to mark out and begin the erection of the first battery this evening.

Three companies of H. M. 53d Regiment were to be at Seurah this day, and to join the detachment in three or four days. The force now in the fort, according to the best intelligence, was between 4 and 500 men, who were twelve months in arrears of pay. Small parties were daily quitting Lutchmun Dowah's service for want of money. He appears quite sullen, and has neither fired a gun, or made any offensive attempt since our appearance before the place. His counsellors are said to be much divided in their opinion. His wives and many of his relations are for giving up the fort. He himself and some others are against the measure, and resolved to make the best defence they can.

29th January, 1809.—This night a battery was commenced upon for two 12-pounders and two 8-inch howitzers, on the plain to the N. E. of the hill, near the gateway on the north west angle of the fort, and within battering distance (as was then supposed) of the gateway itself, which, however artificially strong, was deemed the best point to batter in breach; because in every other part of the works the steep rocky scarp, varying in height from above 100 to 45 feet, formed a serious obstacle to all attempts to breach. On going down at dusk to mark out the battery, Captain Brooke took upon himself to advance 250 paces nearer to the fort than had been originally intended; and the enemy allowed the works to proceed during the night without the least annoyance. Every possible exertion was made to erect the batteries during the night; but from the distance of the camp (where the fascines and gabions were constructed,) and the thinness of the earth on the rocky soil, the completion of the battery was considerably delayed. The enemy offered no opposition. It was now imagined that the gateway and the works at the N. W. angle could be effectually battered from the plain, and Lieut. Colonel Martindell determined to avail himself of the disposition of the people in the fort, to refrain from firing, with a view to erect another battery for four 18-pounders, close to

the two 12-pounders above mentioned. In front, and to the right of these batteries, lies the hill immediately opposite the N. W. gateway of the fortress, on the top of which is a rude stone redoubt, in which a small part of the enemy are posted.

January 30. —On Colonel Martindell's coming down to the battery this morning, he is stated by the officer commanding the artillery, to have expressed his surprise at Captain Brooke having approached nearer than the spot previously fixed upon; and that officer remarks, he stated in reply, that by increasing the exterior opening of the right embrasures, the redoubt on the hill had been brought under the fire of the guns, as well as the point of the fort to be attacked; and that the position of the batteries, though admirable for the former, was too distant for the latter object. The two 12-pounders and the two 8-inch howitzers were this day placed in battery; but as the enemy did not open any fire, the batteries continued silent.

Orders of the day.

No officers, excepting such as are on trench duty, are to go down to the trenches without permission.

31st January, 1809.—Mr. Richardson this day transmitted to the Government a copy of Lutchmun Dowah's letter to his address, couched in terms more disrespectful than the first*.

* *Translation of a Letter from Lutchmun Dowah to Mr. J. Richardson, Agent, Governor General, dated the 26th Mang, Sambat 1865.*

Your letter is received, and I have understood the contents; and Lalla Rakeen has represented the state of matters verbally. With respect to the fort, you have written that Captain Baillie did not promise this; and again you have written, that respecting the seizure of the families of my servants. With respect to the fortress, I have already written you, and writing once is equal to doing so a thousand times. This you may rely upon. Except the fortress, I have no other place of refuge. In the fort, as I am sitting, I am placed there on the part of Government. You, Sir, are a great chief, and will give orders for my remaining there; because since the day on which peace was established between us, I have done nothing averse to amity and friendship. That which you have written respecting Captain Baillie—first, Captain Baillie did promise; after that, I wrote the Ikranameh. If he had not promised to have the fort confirmed in my possession, I never would have promised to give them up. Enquire the truth at Captain Baillie, and see what evidence he will give on his faith. Written engagements certainly are binding, but in my

The 12-pounder and howitzer battery was nearly finished this day.

Orders of the day.

The captain commanding the picquets will give the necessary orders to pass into camp to-morrow morning, a detachment under the command of Lieut. Colonel D. Auvergne.

The 4th Light Battalion, the divisions of the 3d Regiment, 2d Battalion 1st, 1st of the 4th, will take ground to the right early to-morrow morning, and enable Lieut. Wallington to mark out ground on the right of the park for the detachment of his Majesty's 53d Regiment.

The 2d Battalion 26th will gain ground to their left, to enable Lieut. Colonel D. Auvergne, with the five companies 1st Battalion 26th, to take up their present position.

Lieut. Owen, with the detachment 1st Battalion 16th, will join and do duty with the division 1st Battalion 4th.

It is to be considered as a standing detachment order, that on corps coming to their ground, the quartermaster's establishments are invariably to be employed clearing their lines and their front of all grass and combustible matter, more especially near their magazines; and the commanding officer will hold commandants of corps and detachments responsible for the full execution of this order.

The grass now about the lines to be cleared immediately.

1st, 2d, and 3d February.—Working parties of sepoys were employed in forming two small trenches, connected by a zigzag, in rear of the battery, on finishing which, instructions were issued to erect an 18-pounder battery to the left of the 12-pounder battery, the right embrazure of which was con-

country, verbal promises are even more binding than written ones. For five or six months past, Lalla Rakeen and the Killedar, Rajah Ram, have represented matters on my part to you, Sir; and you, Sir, said, Pay your arrears that are due; with respect to the fort, whatever is proper at the time will be done. Now it is just that you act properly; I have been obedient all along, and I am ready to obey any other desire, but surrendering the fortress. Speak not of the fort. The fort is my life. You, Sir, are great, but God will also prosper my undertaking. What else shall I write with respect to my troops? They are of all countries. The salt that each man eats is an incumbency of gratitude on him. In all countries, how will you seize their families? The families of many are in this place: what cause of fear have they? Whatever seems best in your eyes, you, Sir, will follow. I am ready to obey in all other matters (but the surrender of the fort) If you are willing to agree to peace, and will desire any one to be sent, I will send Lalla Rakeen.

(A true translation,)

(Signed,) J. RICHARDSON, A. G. G.

structed so as to allow the right gun completely to command the little hill opposite the gateway.

Mr. Richardson at this period transmitted to Government copies of proclamations, which he deemed it his duty to issue upon the occasion of Lutchmun Dowah's open rebellion; also copy of a Sunnud, appointing an Aumeen to take charge of, and to collect the revenue of the lands forfeited by Lutchmun Dowah's breach of the treaty.

Orders of the day.

The Major of Brigade will send in a receipt to Mr. Richardson, Agent to the Governor General, for Sonaut Rupees 448 12, for the disbursement of "Chittah" to the working parties employed in the trenches and batteries before Adjecgurrh.

Commandants of corps will be pleased to send to the Brigade office their respective receipts for the amount, as per following statement, which they will have disbursed to their men with the least possible delay.

		<i>R. A.</i>
4th Light Battalion, 8 Naicks, 2 Drs. and 162 Sepoys, 4 days,		
4 as. per day,		121 12
2d Battalion 1st Regt. 3 Naicks and 50 Sepoys, do. do. . . .		53 0
1st „ 3d „ 3 „ and 60 „ do. do. . . .		63 0
1st „ 4th „ 3 „ and 40 „ do. do. . . .		43 0
1st „ 18th „ 4 „ 1 Dr. and 100 Sepoys, do. do. . .		105 0
2d „ 16th „ 3 „ „ 60 „ do. do. . .		63 0
		<hr/>
		448 12

4th February, 1809.—Mr. Richardson this day informed Government, that he had concluded an engagement with three Zemindars, of some power and authority among the inhabitants of the hills and passes, by name Dewan Bhaun Sing, a Goand by cast; Omar Sing, of the cast of Dindeca; and Omeeran Sing, of the cast of Goand, by which they agreed, with four Jemedars and 100 Burgundauze, to guard the ghauts and passes up the hills from Bisramgunge all round that neighbourhood, in such a manner that not a man should be able to go into the fort of Adjecgurrh, or furnish the garrison with any supplies; and if any of the troops or servants of Lutchmun Dowah should attempt to pass the above ghaut, that they the said Zemindars would attack and destroy them in battle; and whosoever should be taken, the Zemindars would send into the English camp. And having also searched out the dwelling places of the servants and

troops of the said Lutchmun, they would give intelligence of the same to Government; would cause them to be seized, and to the best of their abilities would prevent the aforesaid Lutchmun Dowah and his troops and adherents from committing depredations or plunder. Mr. Richardson agreed on the part of Government to pay 540 Rupees per mensem for the said four Jemadars and 100 Burgundauze. And in case of the said Zemindars proving zealous servants to the British Government, to restore to them certain villages which had been granted to them as Nankar, since the time of the Bundeelah Rajahs, but which Lutchmun Sing had improperly obtained to be inserted in the Sumud or grant which he had procured from the British Government. Mr. Richardson also reported, that there was another Goand chief, named Dewan Subbul Sah, an inhabitant of Jennah, still more powerful than Bhaun Sing, who had asked permission to come in to pay his respects, expressing a wish to be employed in a similar manner with Bhaun Sing, and the other two Zemindars; and that it was his intention to agree to Subbul Sah's proposal, if upon further information he found there was reasonable ground to expect benefit from the measure.

February 6.—All the batteries on the plain being completed by sunrise this morning, they opened on the N. W. angle of the fortress; but after firing 450 rounds, they were ordered to cease firing; for although the shot reached the fort, yet it would have been an endless business to have attempted to breach at such a distance, and would have required more ammunition than was with the force, it being impossible, by the most accurate firing, at such a distance, to cause every shot even to hit the wall, much less any particular part of it. The platforms of the batteries were laid nearly level, and were about 1500 yards in horizontal distance from the gateway, which was 813 feet above the level of the plain on which the guns stood. The battering guns were elevated as far as 19° , and loaded with one third of the shot's weight of powder. The batteries were seven feet high inside, and 12 feet outside, and supported, in consequence of their great height, by large wooden stakes driven in all round the merlons. To advance nearer to the works of the fortress was impossible, so long as the hill in front, (which would have commanded

the rear and flanks of any batteries on the plain,—vide plan) was in the possession of the enemy. It was therefore at last thought advisable to dispossess the enemy of this hill; and the redoubt on the top having accordingly been breached from the 12-pounders drawn back in open day on the plain in rear of the battery, the hill was carried in the following manner. The officers appointed to command the parties of attack met at the commanding officer's quarters, where it was agreed that all signals should proceed from the officer commanding the artillery, and having received their final instructions, proceeded down with their parties to the attack at 12 at night. The disposition of the guns was as follows. Three 18-pounders in the left battery, and two 12-pounders and one howitzer in the right, were left in the batteries, under the orders of Captain Lieut. Ferris, with instructions only to employ the two 12-pounders against the point of attack, and not to use the 18-pounders on any account, unless the enemy attempted to support the hill by additional troops from the town. Captain Brooke proceeded with one 18-pounder, the remaining howitzer, and two 6-pounders, with the troops for the attack, immediately to a point situated on the north west side of the hill, whence it was intended the infantry should ascend. At this place two 6-pounders were left under Lieut. Gramshaw, and Captain Brooke proceeded with Lieut. Campbell and a small covering party, with the 18-pounder and howitzer, further to the south, to the bank of a dry tank, the spot fixed on in the evening of that day by Captain Brooke, who had gone for that purpose at sunset in the dress of a native, with some of Colonel Martindeh's Hircarrahs. The 18-pounder, which was to fire the concerted signal, being opened, was instantly answered by the other guns and batteries; and after continuing a smart fire with grape and shells for a short time, a carcass was fired as the signal for the storming party to advance, the batteries still continuing to fire until the troops arrived at the first shoulder of the hill, when they gave three cheers, the signal for the guns to cease. At this time the enemy opened their heavy guns from the fort, but fired slowly and irregularly, and did no damage. The hill was carried without bloodshed; and on gaining possession, our troops got under cover with little trouble.

Extract from a Letter, addressed by the Agent to the Governor General, Bundelcund, to the Secretary to Government, under date the 7th February 1809.

I have much pleasure in reporting, that last night the hill to the north west angle of the fort, which commands the gateway and the works that defend it, and on the top of which the rebel had a party stationed in a sort of redoubt, was taken possession of, together with the town of Nosheher, below the fort, situated to the southward of the hill in question, without any loss. Not a man was killed or wounded.

2. Colonel Martindell had intended to assault the hill on the night of the 6th; but on a few shot being directed against the redoubt, it was the opinion of Captain Brooke, the artillery officer, that the place was considerably stronger than was imagined, and Colonel Martindell very prudently determined to postpone the assault till the effect of a little battering was tried. Accordingly the redoubt was briskly battered from the two 12-pounders about an hour yesterday, and completely breached.

3. The attack was made just as the moon rose, after a smart cannonade, to alarm them, from the batteries on the plain; and the party fled without resistance; unless a random and harmless discharge of a few matchlocks can be termed resistance. I consider the fortress half taken by the possession of this hill, and the town. All communication with the country is now completely cut off on the side of the town, and that on the eastern side by the *Tirwan Durwajeh*: the only other outlet is stopped up by the arrangement I have made with the Goand chiefs, as reported in my address of the 4th instant.

4. We have now the choice of two certain ways of breaching the works and the gateways at the north west angle, the only assailable point; namely, we may either get our guns upon the hill (which will be a work certainly of great labour,) or we can advance our batteries on the plain, four if not five hundred yards, which could not be done while the party remained in possession of the hill, as there was no possibility of protecting the men in batteries from the shot."

This day Lalla Rakin, who was formerly sent to the Agent to the Governor General as vakeel on the part of Lutchmun Dowah, came down from the fort, and stated that Lutchmun Dowah, having been persuaded by his mother and other relatives that there was no benefit or advantage to be derived from fighting with the British Government, offered to leave the fort, on condition of his having the villages included in his sunnud confirmed to him, together with their diamond mines, and the villages of which he had been dispossessed restored, as also a place of security for his wife and family.

The Agent to the Governor General replied, that no engagement or promise could be made with Lutchmun Dowah, but that he with his family and a few followers might come and remain in security with him (Mr. Richardson) until the Governor General's pleasure concerning him should be known; and Mr. Richardson engaged, on his own part and that of Government, that no injury or molestation should be offered to Lutchmun Dowah or his family. The vakeel was moreover told, that no other terms would ever be granted by the British Government. If Lutchmun Dowah agreed, he might come down; otherwise no other message or proposal would be received from him.

This morning, working parties were employed in clearing the jungle, and cutting a road at the back of the hill opposite to the gateway, which was executed under cover of the hill, unobserved from the fort. We had now a fine opportunity of examining the works of the fort from the summit of the small hill of Bahowtah, the road to which was in three regular ascents: the summit or ridge of each ascent formed a narrow pathway, which finally ran out in a kind of shoulder towards the fort. Under the hill to the right, looking towards the fort, was the town of Nooshehur, fortified by a rude stone wall, carried up to the top of the ascent. At the foot of the hill, above 800 yards from the gateway of the fort, was the gate of the town; and this being considered a good situation for a two gun battery, one was erected during the night of the 7th and 8th February, in which two 18-pounders were placed. Under cover of this battery, it was resolved to ascend the hill; and the next night, being that between the 8th and 9th of February, the artillery and pioneers were employed in erecting a battery on the upper shoulder, on which two 6-pounders were placed before daylight. Under protection of this battery, two 18-pounders were on the day of the 9th, brought up to the first shoulder, and placed under cover of an old building of masonry which occupied the whole breadth of the ridge. The next night, being that between the 9th and 10th of February, a battery for a 6-pounder, on the summit of the hill, was erected on the point nearest the fort. There was sufficient breadth for two 6-pounders on this spot; but one embrasure only, with a long merlon, was prepared, so that the gun might be run well under cover. As

the situation was near the fort, and under the fire of the enemy's heaviest guns, it was apprehended, that if two were placed there, they might be dismounted, the space not being sufficient to shelter both. Part of the same night was employed in cutting an opening through the masonry of the building, occupying the small flat ridge on the summit of the first ascent, with a view of getting the two 18-pounders past this obstacle, the building extending entirely across the flat, leaving no room for the guns to be passed to the right or left of it. On the 9th, Rakin, the vakeel, again came into camp, stating that Lutchmun intended to evacuate the fort, and to throw himself on the mercy of the British Government*. The next morning, the negotiations continuing, the 6-pounder was advanced to its position on the summit of the hill, and an 18-pounder was drawn to the upper shoulder: advantage was also taken of this state of things, to withdraw the 6-pounder re-

* *Hajib Ul Urzee of Lutchmun Sing Dowah, presented by his Vakeel Lulla Rakeen, 8th February 1809.*

Requests.

Answer.

1. Whatever sepoy's are in my service in the fort, the British Government will not permit them to molest me on account of their arrears.

2. The British Government will not listen to, or take cognizance of, any complaints on account of plunder or debt, or any act committed previous to this date.

3. All the property in the fort to be mine.

4. When I repair to the presence, I am to be treated with the distinction of other chiefs of Bundelcund; and I am always to be so treated by the British Government.

1. The British Government will not interfere in their claims; and while Lutchmun Sing remains in the British camp, or under the protection of the Agent to the Governor General, no one whatever shall molest him.

2. No complaints on account of plunder or debt, or acts committed previous to this date, will be taken cognizance of by the British Government.

3. All private property, that is, all property but warlike stores, Lutchmun may take away.

4. At the time of meeting, Lutchmun Dowah shall be treated with the attention and respect due to his rank, like the other Bundelcund chiefs.

(Signed) RAKEEN MOKTEAR, on the part of Lutchmun Dowah.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

maining on the second ascent, and to push up the other 18-pounder. Before night on the 10th, two 12-pounders were also brought up behind the building where the 18-pounders were originally placed, in front of which a battery

To N. B. EDMONSTONE, Esq. Secretary to Government in the Secret and Political Department, Fort William.

(Express.)

SIR,

In continuance of my reports of the 8th and 9th instant, I have the honour to state, that the vakeel from Lutchmun Dowah came into camp yesterday; and he having no authority to fix the time or manner of his master's evacuation of the fort, and the British troops taking possession of the same, and being decidedly of opinion, that any relaxation on my part would only give rise to new demands, and excite greater hopes, after mature deliberation, I determined to address to Lutchmun Dowah a letter, of which No. 1. is a copy, both in the Hindowee and Persian languages; No. 2, an English translation.

2d. I have further the honour to state, that it is now past 12 o'clock, and that Lalla Rakeen, and another person, as vakeels on the part of Lutchmun Dowah, came into the camp at 10 A. M. this day, and stated, that as to-morrow is to be a lucky day, their master requested to be allowed all to-morrow to commence the evacuation of the fort, and putting our troops in possession thereof.

3d. I confess, from this putting off from time to time, I begin to suspect Lutchmun Dowah's sincerity; yet as it happens at the same time to answer our purposes, in pushing forward our preparations, which I first ascertained by previous consultation with Colonel Martindell, I deemed it my duty to comply with this request; my reasons for which are expressed in No. 3, the copy of my letter to Lutchmun Dowah, both in Persian, and Hindowee, delivered to his vakeels. No. 4. is an English translation.

4th. I am determined not to relax the least from the terms I have granted; and coercive measures will be renewed after to-morrow, on the non-fulfilment by Lutchmun Dowah of the terms I have stated in No. 3, which is my final communication.

5th. If it shall appear that I have not acted according to the wishes of the Right Honourable the Governor General in Council, or in any way contrary to propriety, or a just sense of what the British dignity required, I trust I shall be pardoned, and the error be attributed rather to want of judgment than want of zeal to the public interest.

6th. I hope further it will be remembered, that as early as the 30th December 1808, I dispatched a letter to your address, by express, of which No. 5. is a copy, requesting instructions for my guidance, with respect to the terms it would be proper to allow Lutchmun Dowah, in case of either of two events occurring, one of which supposed events

for them was erected. We had now one 6-pounder at the summit, 460 yards distant from the point of attack ; two 18-pounders, at 580 yards ; two 12-pounders ; at about 770 yards, and

was exactly similar to the present existing case. To the above letter I have not yet received an answer, and I have consequently been necessitated to exercise my own circumscribed and fallible judgment.

I have the honor to be,

Sir,

Your most obedient Servant,

*Camp before Adjeeghur, } (Signed) J. RICHARDSON, A. G. G.
the 10th Feb. 1809. }*

N. B. Although I have some doubts of Lutchmun Dowah's sincerity, I am confident that we shall gain possession of it, one way or other.

(Signed) J. RICHARDSON, A. G. G.

The Translation of a Letter to Lutchmun Sing, dated the 9th of February, three o'clock P. M.

After compliments. Yesterday and the day preceding, Lallo Rakeen having come into the presence on your part, represented your agreement to surrender the fort ; and having delivered in your Wajeeb ul Urzee, or " paper of requests," inserted in writing my answers thereto, as was proper, and consistent with the mercy and dignity of the British Government. From the general tendency of the conversation and assurances of the said Lalla Rakeen, I was much pleased to hope that the blood and property of individuals might be spared. Now the said Lalla is returned to the presence, but unauthorised to fix the time at which you will evacuate the fort with your troops, and put the British troops in possession thereof : for this reason some doubt of your sincerity has taken place in the mind of the presence, that perhaps you are only negotiating to gain time. For this reason, as a final communication, it is now written, that on to-morrow, being Friday, and the 10th February 1809, equal to 10th Faugun 1865 Sumbut, at the hour 12 o'clock, you come down from the fort with your troops, and leaving fifty men for the protection of your property, &c. place the troops of the Sirkar in possession of the fortress. If in this you make any deviation or delay, after the expiration of the period stated, the cannon of the Sirkar will again open on the fort, and hostile operations for its capture be pursued ; after which no proposition will be heard, or had faith in.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

The Translation of a Letter to Lutchmun Sing, from Mr. J. Richardson, Agent to Governor General, dated the 10th February, half past 1 o'clock P. M.

After compliments. Yesterday I wrote a Perwannah, addressed to you, stating, that if by the hour of 12 o'clock this day, you did not

two 18-pounders on the plain, at the gateway of the town, at about 800 yards; on the left of which was placed two 8-inch howitzers, the elevating screws of which were taken out, in

come down from the fort with your troops, and put the British troops in possession of the same, the cannon of the Sirkar would again open on the fort. This day Lalla Rakeen, and Lella Parah, have on your part appeared in the presence. From their indefinite conversation, and entire evasion, it is clear to my mind that you are negotiating entirely for the purpose of gaining time, and without a particle of sincerity. Notwithstanding this, and for the purpose of shewing to all the world, that the British Government has adopted no precipitate or severe measures against you, I give you again to the hour of 3 o'clock P. M. to-morrow. It is indispensable that by the above period, according to your engagement, you with your troops come down from the fort, and put the troops of the Sirkar in possession of the same; otherwise, after the expiration of the stated period, the fire of the cannon of the Sirkar shall be directed against the fort, and not cease till it is taken; and the whole of the garrison shall be put to the sword, and all the consequences will be upon your head. This is the last writing. Do not send your vakeel again into camp.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

To N. B. EDMONSTONE, Esq. *Secretary to Government in the Secret and Political Department, Fort William.*

SIR,

I have the honour, in continuance of report of yesterday, to state, that the hour of three o'clock P. M. is now expired, and I am sorry to say that neither a satisfactory message, or indication of any intentions of compliance with the purport of final letter to Lutchmun Dowah of yesterday, has been received. On the contrary, his vakeels are returned with a story, that to-day and to-morrow are unlucky days, and that therefore their master requests till the day after to-morrow to evacuate the fort, &c.

2. This being the case, and Colonel Martindell having intimated that his military preparations were completed, and the batteries ready to open on the fort, the moment I notify to him that the late negotiation is at an end, I thought it proper to address a letter to Lutchmun Dowah, and sent it by vakeels, to the following effect: "That the period stated in my last letter of yesterday's date was expired, without having received any intimation of his intention to comply with the terms stated therein, and previously agreed to by him; the negotiation was now consequently at an end, and the terms lately agreed to by me, as well as the written securities granted for the safety of his person, and all other promises, were now null and void; that the cannon of the Sir-

order to allow the box of the screw to be turned downwards, on which sheepskins were placed, to receive the bottom of the cascable: the trails of the howitzers were also sunk about six inches, and a platform was made with magazine planks for them, as well as for the wheels to run on. By these means they were elevated to 40 degrees, and were then used with an increase or decrease of powder, as mortars. A less elevation would at that distance have required so much powder to throw the shells up into the fort, that the carriages could never have borne the shock. On the morning of the 11th February, the whole of the batteries were reported ready for action, and on that day the negotiations broke off. The batteries were officered in the following manner. Lieut. Gramshaw was ordered to take charge of the left 18-pounder battery on the hill, and Lieut. McLeod the right near the gateway on the plain. Lieut. Campbell had charge of the two 12-pounders on the hill, with orders to dismount the enemy's guns. Lieut. Marshall had charge of the 6-pounder on the summit, from which point the officer commanding the artillery directed the fire.

At a quarter past three P. M. in the evening of the 11th, the batteries being ordered to open, they commenced in regular form, beginning with the right 18-pounder below, right 12-pounder on the first shoulder, right 18-pounder on the upper shoulder, and the 6-pounder on the summit, which was immediately withdrawn behind the merlon, the fire running down the hill by the left guns in the same manner. The fire was conducted

kar should again open upon the fort; and for all the evils attendant upon a renewal of hostilities, he had himself to blame."

3. I am extremely sorry, but not much disappointed, that the sullen obstinacy of this man has taken his turn. To have acted otherwise than I have done, would in my humble opinion have been derogatory to the dignity of the British Government. I can only add, that I have most zealously acted according to the best of my judgment, and on the most mature deliberation.

I have the honour to be,

Sir,

Your most obedient servant,

Camp before Adjeeghur,
February 11th, 1809, 5 P. M. } (Signed) J. RICHARDSON, A. G. G.

P. S. Our batteries are now playing on the fort.—J. R. A. G. G.

in this order, with a view to give the officers an opportunity of seeing the immediate effect of their shot. The two howitzers then opened, when the cannonade became general; and before sunset, the corner bastion of the lower works, and about 20 feet of the curtain to the left, was brought down: an iron mortar in that bastion was dismounted, falling with its carriage on the outside of the breach, buried in the rubbish. The batteries ceased firing at sunset, and commenced at day light on the morning of the 12th, breaching regularly upwards, in the form of a semicircle, following the staircase leading to the top. The batteries ceased firing from 10 o'clock till 2, as the firing could not be conducted so correctly as could be wished, owing to the smoke hanging in the valley between them and the fort. They opened again at 2 o'clock. One part of the gateway being a house placed endways to the fire, required a great deal of time and minute firing to bring it down. Ceased firing again at sunset. Early in the morning of the 13th, succeeded in breaching the house, and proceeded to breach higher; fired for three hours without much apparent effect, when the whole of a work at least 50 feet in length, came down at once, exposing the top of the fifth gateway to view. Continued breaching at that point, and above. Breached the wall which covered the gateway, leading by a flight of steps to the grand guard-room. At this moment the batteries were ordered to be silenced, and the killedar of the fort came out*. Not a vestige of a road being left, nor a

* To N. B. EDMONSTONE, Esq. *Secretary to Government in the Secret and Political Department, Fort William.*

SIR,

At six o'clock yesterday evening, I had the honour of dispatching to you by express a few lines privately addressed, communicating the pleasing intelligence that Lutchmun Dowah was then with me in our camp, and that the British troops were in possession of the fortress of Adjecgurh.

2. I have now the honour to report, for the information of the Right Honourable the Governor General in Council, the particulars in detail which occurred since my dispatch of the 11th instant. No. 1. is a copy of the letter which I deemed it my duty to address to Lutchmun Dowah, as mentioned in my dispatch above alluded to. No. 2. is a translation thereof.

gateway, except the two leading to the guard-room. At four o'clock the same evening, Colonel Martindell, with 500

3. In conformity to the tenor of the above letter, our batteries opened on the fort, about half after 3 clock p. m. on that day. The fire was most correctly directed, and the effect both from shot and shells beyond conception destructive; and the manner in which it was conducted reflects the greatest honour upon the zeal, exertion, and skill of Captain Brooke, and the artillery officers under his command. Before night-fall of the 11th, the bastion to the northwest angle of the fort was quite demolished, and a breach rendered practicable in the curtain that joined it.

4. The fort was battered all the day of the 12th instant, except during the intervals necessary for refreshment, from one battery of two 12-pounders, and 2 howitzers erected at an excellent battering distance near the town of No-Shehur; one of two 12-pounders, and one of two 18-pounders, erected on different points of the hill, which commands the northwest angle and the gateways; and one six-pounder was placed on the summit of the hill. The intention was to have had two sixes there; but it was found impracticable, from the narrowness of the hill, not allowing a sufficient face to the battery to allow of two embrasures.

5. Every shot took effect from the whole of these batteries, and there was only one gate left standing at five,—the last and upper one, which entered the fortress, and that was considerably shook. At 10 o'clock a. m. yesterday, two Hircarrals came in from the fort with a letter from Rakeen, Lutchmun's Vakeel, so frequently mentioned, to Seyed, Ewan Nassur Ally, my native assistant, to whose judgment and abilities the public service is much indebted, and without whose assistance, on many occasions, I could not have obtained the success with which my humble efforts have been crowned. No. 3 is a Persian version, and copy of the above, and No. 4 is a translation of the same.

6. On the receipt of the proposition contained in the above, and not being desirous of driving Lutchmun Dowah to despair with his women and family in the fort, I immediately consulted Colonel Martindell, as commanding officer, being anxious to avail myself of the aid of his judgment; and after having fully explained to that officer my reasons for deeming it proper, on principles of local as well as general policy, and also from motives of humanity, to comply with Lutchmun Dowah's request, by a renewal of the terms I had before granted to him, as reported in my dispatches of the 8th, 9th, and 10th instant, I had the satisfaction to find that Colonel Martindell, after mature consideration, agreed entirely with me in opinion.

7. Being myself without any doubt as to the line my duty required me to pursue on this occasion, and finding my sentiments strengthened by Colonel Martindell's coinciding in opinion, I immediately determined to address a letter direct to Lutchmun Dowah, of which No. 5 is a copy, and

sépeys, took possession of the fort. At the time of our ceasing to fire, only 1027 rounds of 18-pounder shot, with 813

No. 6 an English translation; and I caused my native assistant above mentioned to address one also to the Vakeel Rakeen, of which No. 7 is a copy, and No. 8 an English translation.

8. The above letters were dispatched about half after 11 o'clock A. M. by the Hircarrahs; and to expedite decision, I sent with them Lalla Maharajah, a man in whom I have confidence, and whose services I have found extremely useful; and to obviate any difficulties, or excuses about Lutchmun Dowah's having no carriages or mode of conveyance, I sent one of my elephants down, with orders for Lalla Maharajah to return immediately, unless he saw preparations and a real inclination in Lutchmun Dowah to come down, and deliver up the fortress; but in case he found him sincere, to send word, and my native assistant should go down, and bring him (Lutchmun) up to my tent.

9. About three P. M. Lalla Maharajah sent a message, that Lutchmun was coming down from the fort, and requested that my Dewan might be sent; accordingly I sent him, and communicated the circumstance to Colonel Martindell, who immediately went down to the trenches to see in person the fort taken possession of by our troops; and before the day closed, about 600 sepoys, under the command of Lieut. Colonel D'Auvergne, were in possession of the place, and all perfectly quiet and secure.

10. A little after dark, Lutchmun Dowah arrived at my tent, in an apparent state of sullen stupefaction. I received him with all the attention due to his rank which is not high, and indeed with more, on account of his situation. At the moment, from obvious motives, I gave him a Khillaat, on his entire submission to the will of Government, to dispel his fears, and pitched a tent for his accommodation, and he is now near me. His women and property are now coming out of the fort, and he has asked leave to deposit them at present in the new town, which I am very glad of, as they are in our power there, and this hold over them will prevent any tricks being played by Lutchmun or his people in the country.

11. The present report and document, and those contained in my dispatches of the 8th, 9th, and 10th instant, will fully exhibit and explain the terms on which I have received possession of Adjeegurh, and admitted of Lutchmun Dowah's submission, and likewise detail the steps and progress to the conclusion of this important enterprize.

12. It does not become me to dwell upon the measures which it fell to my lot to adopt, as conducive to this desirable end. Those measures are before a liberal and intelligent Government, and I am confident they will be justly appreciated. I only claim the humble merit of zeal and good intentions.

12-pounder, remained in store, besides 3000 18-pounder shot, within one day's march. Having this quantity of ammunition,

13. On the judicious military measures pursued with such success and unremitting zeal by Colonel Martindell, I may be allowed to speak with less reserve; and though I may not be considered a competent judge, I feel it a duty which justice demands to state, from being an eyewitness of the skilful military arrangements adopted, and the extraordinary exertion made by Colonel Martindell, the officers, and every branch of the troops under his command, that Colonel Martindell and the whole of the detachment under his command, are eminently entitled, in my humble judgment, to the approbation and the notice of Government; and I attribute the successful termination of this enterprize, entirely to the judicious military measures and skilful arrangements made by Colonel Martindell, aided by the strong impressions of dread made upon the minds of Lutchmun Dowah and his followers, by the gallant and necessary attack of the strong post of Ragowly.

14. Finally, I hope, I may be pardoned the egotism of adverting to my uniform opinion, that the opposition offered by Lutchmun Dowah would be feeble, and the possession of his fort be gained more easily than was generally imagined. The result has proved my opinion to have been tolerably correctly founded. Not a single casualty has happened on our part during the siege, except one sepoy, who was killed at the battery by a matchlock ball by a fellow concealed in the jungle. Lutchmun's resistance has been truly contemptible, and I do not believe that he fired from his cannon a dozen shot during the siege, and not one of those fired took effect.

I have the honour to be,

Sir,

Your most obedient Servant,

Camp near Adjegurh, } (Signed) J. RICHARDSON, A. G. G.
February 14th, 18 9.

Translation of a Letter from Mr J. Richardson, Agent, Governor General, to Lutchmun Sing Dowah, dated the 11th February 1809, three o'clock p. m.

After compliments. Yesterday it was written to you, that if by the hour of three o'clock p. m. this day, you did not come down from the fort, and put our troops in possession thereof, the fire of our cannon should be renewed upon the fort for the capture thereof. Now the above period is expired, and you have not (according to your agreement) come down from the fort, or put our troops in possession thereof. You are therefore informed, that now the cannon of the Sirkar are about to open, and that all the written agreements and engagements for your personal security, &c. which have been entered into during these five

it had been resolved to beat down the road, the party went up, to render the breach as practicable as possible.

days past, are now null and void, and of non-effect : after this, that which you may see will have proceeded from yourself.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

Translation of a Letter from Lalla Rakeen, the Vakeel of Lutchmun Sing, to Dewan Seyd Nassur Ally, Native Assistant to the Agent Governor General, dated 14th Fagun 1865 Sunbul, Sunday.

After compliments. Whereas I have all along represented matters to you, and you were displeased at the same. To morrow, being Monday, is a lucky day, now we are ready to act according to your pleasure. Renew the engagements for personal security that were before entered into, and render them valid and effective, and send them, and also send Siree Maharajah. If you are averse to send him, send one or two Chupprassies, who will come to the gateway, and take me with them, that I may go and state matters to you, and prepare for Lutchmun Sing's coming down from the fort, that all the business may be settled.

Upon a separate paper.—If you agree to these terms, on Monday after twelve, the day is fortunate, send for your servant, when I go to state matters to you. He (Lutchmun) will come down from the fort.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

Translation of a Letter from Mr J. Richardson, Agent, Governor General, to Lutchmun Dowah, dated the 14th February, 11 o'clock P. M. 1869.

After compliments. By a letter from Lalla Rakeen, your Vakeel, to Dewan Seyd Nassur Ally, I understand that you have again firmly determined in your heart, that after 12 o'clock this day you will come down from the fort, and put the British troops in possession thereof; and that you have required a renewal of the engagements for personal security which were before entered into by me, and the said Dewan : wherefore, from motives of humanity and mercy, it is again written, that if by the hour of two o'clock P. M. English time, which is equal to four hours after meridian Hindoostanee time, you come down with your troops, and put those of the Sirkar in possession of the fort, and you yourself agree to remain with me, with 20 or 30 followers, until the British Government shall determine on your case, no injury to the life, the honour, or the property, or the children or families of yourself and relations shall have place, and no molestation shall be offered them. Consider this writing an engagement for your security; and until the expiration of the specified time, this security is to have effect; and from the time your Hircarrahs who have brought the chit return to the fort, to the hour of

Orders of the day.

Lieut. Colonel D'Auvergne, with the 26th Regiment under his command, will garrison the fortress of Adjegurh.

The men on duty from that corps are to be withdrawn, and the regiment to move this evening at three o'clock.

The guns and tumbrils will remain with the park.

The parties on the hill are to be withdrawn; and return to camp with the guns and stores.

Lieut. Barton, Commissary of Supplies, is ordered to make over the whole of the Ootah in his depot to Lieut. Colonel D'Auvergne, who will grant his receipts for the amount, on the part of Government.

Captain Brooke is authorised to pay the following rewards for all shot and shells that may be found, and delivered in the park, viz.

18-pounder shot, each,	. . .	8 Annas.
12 " " " "	. . .	6 "
6 " " " "	. . .	4 "
Carcasses or shells, each,	. . .	1 Rupee.

two o'clock p. m. the fire of the Batteries shall be suspended till you come down from the fort.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

Translation of a Letter from Dewan Syed Nassur Ally, written by Orders of the Agent to the Governor General, and addressed to Lalla Rakasa, the Wakeel of Lutchmun Dowah, dated 14th Fagun 1865 Sambat, Monday.

Your letter is received, and the contents understood. With respect to the point of your coming in, and of sending to the fort Lalla Maharajah, regarding which you have written, evasive and procrastinating proposals shall not now have place. Even now, if Lutchmun Sing sincerely proposes to come down from the fort, let him come down this day with his troops, by the time that four hours (Hindoostanee) after 12 o'clock are expired, and put the troops of the British Government in possession of the fortress, and let Lutchmun himself, with twenty or thirty men, come into camp, and remain with the Agent to the Governor General until the British Government shall decide upon his case. No injury or molestation shall be offered to his person, his property, or those of his wives, children, or relations. Understand this as a written security, and engagement to this effect from me. To the period of four hours (Hindoostanee,) (two o'clock p. m. English time,) after meridian, this security will be in force.

(A true translation,)

(Signed) J. RICHARDSON, A. G. G.

Return of Ammunition and Stores expended against the Fort of Adjeegurh during the Siege, by a Detachment of Artillery, commanded by Captain J. H. BROOKE.

Camp Adjeegurh, February 17th, 1859

NAMES OF STORES.	No.	REMARKS.
Axes with helvcs, felling, serviceable, —	7	} Missing.
Axes with helvcs, pick, —	3	
Bags, double gunny, for sand, —	897	
Bamboos, large, —	18	} Missing
„ small, —	1210	
Basket, hand bamboo, —	63	
„ „ rattan, —	47	
„ „ jowe, —	227	
Bills, hand, —	2	
Candles, wax, seers, —	10	
Cartridges, empty serge, 18-prs. —	2053	
„ „ „ 12-prs. —	787	
„ „ „ 8-in. howit. —	278	
„ filled and fixed to case, 15 pounders, —	23	} Lost.
Chalk, Europe, chittacks, —	12	
Carcasses, 8 inch, serviceable, —	10	
„ composition, lbs. oz. —	120 8	
Effits, gun, —	1	
Fuzes, filled, 8-inch, —	541	
Hatchets, —	1	
Kitt, lbs. oz. —	10 8	
Line, seizing, country, maunds, —	10 33	
Match, gun, country, sks. —	16	
„ „ quick, oz. —	10	} Broke and lost.
Mallets, —	46	
Mamooties, —	8	
Needles, packing, —	3	} Broke and lost.
„ sail, —	2	
„ sewing, —	5	
Oakum, seers, —	30	} Lost
Palms, steel, —	1	
Paper, Europe, quires, —	1	
Pencils, black lead, —	2	} Lost
Porthres, filled, —	400	
Powder, Alhabad, cylindrical ordnance, lbs. —	300	
Powder, Bengal pit, —	13689 8	
„ „ cylindrical, musquet, —	700 12	
Powder, modelled, —	12	
Pins for fastening battery platforms, —	50	
Rammers, earth, —	3	
Rattans, Malacca, —	2254	
Rundles, —	1	

der the fort, on the terms held out to him on the 9th instant. Taking into consideration the great difficulties we would have had to encounter in ascending the breach, added to the desperate resistance we might expect, (for all his women and principal Sirdars were in the fort,) I agreed in opinion with the Governor General's Agent, that at the present juncture, it would be advisable to grant him the terms he solicited, as the services of the detachment might be required in another quarter. At three p. m. Lutchman withdrew his garrison, and at five we occupied the fort of Adjeegurh.

On a careful and minute examination of this stupendous fortress, and the means of defence that still remained to the Bondeeelaks, added to many natural obstacles, I was confirmed in the propriety of the opinion given to Mr. Richardson, with respect to allowing Lutchman Dowah terms, and I am convinced it has been the means of saving many hundred valuable lives.

Before I conclude, I deem it an incumbent duty to request his Excellency's particular attention to the merits and services of the troops under my command. The cheerfulness with which they underwent severe toil and hard duty, their perseverance in working in the trenches, and making roads up the hill of Bahoutah for the guns to be drawn up, and the alacrity they showed in dragging them up a most difficult and steep ascent, entitles them to every praise in my power to bestow.

To Captain Brooke of the artillery, to his officers and men, I feel the greatest obligation. The unremitting exertions he made, and the skill and science he displayed during the siege, entitles this valuable officer to my warmest approbation and applause.

ORDERS OF THE DAY.

The Commanding Officer most heartily congratulates the detachment he has the honour to command, on the successful issue of their meritorious exertions, to which, also, the surrender of the important and formidable fortress of Adjeegurh is to be attributed.

To every officer and soldier, individually, he returns his most grateful thanks, for their unremitting zeal and energy throughout, and for the cheerfulness with which the sepoy, animated by the example of their officers, both worked in the trenches and assisted the laborious and fatiguing duties of the artillery and pioneers, in making roads, and dragging the guns up so steep and difficult an ascent.

To the artillery, the heavy duties of the siege more particularly fell. Their exertions were great, and vied with the natural obstacles they had to encounter. Their fire was inimitably well directed, and the commanding officer must ever feel himself indebted to the officers and men who conducted it.

The judgment, zeal, and energy of Captain Brooke, commanding the artillery, his personal and unremitting exertions, were so conspicuous during the siege, that, to do ample justice to the merits of that valuable

officer, the commanding officer cannot convey in terms too strong his high sense of approbation and applause.

The laborious duties that fell to Lieut. Baddely and the pioneers, were performed with that zeal and cheerfulness, the commanding officer has from the formation of the detachment had the satisfaction to notice, and which justly entitles Lieut. Baddely, the officers and men under his command, to his warmest approbation.

From the uniform zeal and energy that has marked the conduct of the detachment in every situation, Lieut. Colonel Martindell has not a doubt, that had the enemy stood a storm, their gallant exertions would have been crowned with complete success.

Extra battā to be served out to the whole of the European troops in camp.

General Orders by the Governor General in Council, 6th March, 1809.

“The Governor General in Council discharges a satisfactory obligation of his public duty in recording the high sense which he entertains of the judgment of Lieut. Colonel Martindell, in arranging the attacks of the fortified heights of Ragowly, and of the distinguished spirit of gallantry and persevering courage, manifested by Lieut. Colonel Lawtie, and the officers and men employed under his personal command on that occasion. The Governor General in Council duly considers the extraordinary difficulties opposed to the execution of this vigorous enterprize, by the strength of the enemy’s position, and by the advantages which it afforded of determined resistance to the efforts of the British troops; and contemplates with sentiments of the highest applause the undaunted zeal and gallant exertions of the brave officers and men of the detachment, which finally succeeded in compelling the enemy to abandon his fortified posts with heavy loss. And the Governor General in Council desires to convey his thanks to Lieut. Colonel Lawtie, and the officers who are stated by Lieut. Colonel Martindell to have particularly distinguished themselves on this occasion, as well as to the other officers, and to the men of the detachment employed in the execution of this arduous service.

“His Lordship in Council deeply laments the loss sustained by the British troops in the attack; but is happy to reflect, that the casualties have been less extensive than what might have

been expected from the nature of the obstacles which opposed the exertions of the troops.

“The Governor General in Council has received with extreme concern the information of the decease of Lieut. Jamieson, who was severely wounded in the gallant discharge of his duty. To the surviving wounded officers, Lieut. Fry and Ensign Speck, the Governor General in Council desires that his approbation of their animated courage may be especially communicated.

“The judicious dispositions which regulated the successful attack of the fortified hill in the vicinity of Adjeegurh and the town of Noshehur, are considered by the Governor General in Council to be highly creditable to Lieut. Colonel Martindell’s professional abilities ; and the energy and exertions of the officers and men, which secured the success of that operation, establish an additional claim to public approbation.

“To the able arrangements formed by Lieut. Colonel Martindell, and to the zeal, irresistible bravery, and laborious exertions of the officers and men in carrying them into effect, and especially to the distinguished example of military ardour and persevering courage afforded at the attack of Ragowly, the surrender of the fortress of Adjeegurh is principally to be attributed ; and although the Governor General is satisfied, that the same success would have attended the arduous operation of a storm, his Lordship in Council is happy to be enabled to express the sentiments of his cordial approbation and applause on the complete accomplishment of the object of the late expedition, unaccompanied by the feelings of regret at the additional loss which the gallant troops would probably have sustained in the assault of a fortress so strongly fortified by nature and by art, as that of Adjeegurh.

“The Governor General in Council therefore records on this occasion his public thanks, generally, to the officers and men employed during the late campaign in Bundlecund, and, especially to Lieut. Colonel Martindell, whose judgment and military skill, seconded by the courage and exertion of the gallant detachment which he commanded, have happily accomplished an undertaking, not less arduous in its nature

than important in its effects to the interests of the public service.

“The Governor General in Council deems it an obligation of justice, to take this opportunity of expressing the high sense which he entertains of the essential aid afforded to the operations of the detachment, by the zeal, activity, and vigilance manifested by Mr. Richardson, the Governor General’s Agent in Bundelcund, who accompanied the troops, and employed his personal exertions and his local influence and authority in a manner materially conducive to the accomplishment of the object of the expedition. Mr. Richardson’s exertions were beneficially directed to the important purpose of procuring supplies for the troops; and his judgment and activity were eminently conspicuous in the measures and arrangements by which the besieged were deprived of the resources of the surrounding country, and of the means of external succour, and in the terms of surrender, which he proposed to the Killedar of Adjeegurh, and which by firmness and decision he ultimately secured.”

The little property captured in this fortress (in value 1562 rupees) was given to the families of the Sepoys killed and wounded at Ragowly.

Soon after the surrender of Adjeegurh, it was occupied by a battalion of native infantry; and Colonel Kyd of Engineers was sent to report on the expediency of placing it in a proper state of repair, or of destroying its works.

Colonel Kyd considered it “a fortress of uncommon strength, unassailable by open force, and little liable to be carried by surprise.” He further stated, that it was impossible to destroy it as a place of strength; and it has consequently been ever since occupied by a force of native infantry, to prevent its falling into the hands of marauders.

Immediately after the siege, Lutchmun Dowah having left his family in the village Noh Shehur, under the hill of Adjeegurh, accompanied the Governor General’s Agent, Mr. Richardson, to Bandah; and although that gentleman refrained from making any direct overtures in regard to a future provision for Lutchmun or his family, he did not hesitate in conversation, both with him and his Vakeel, to hint, that from the known

liberality and humanity of the British Government, he might expect "some part" of his former territories to be restored.

Not content with these assurances, Lutchmun addressed the following extraordinary petition to Mr. Richardson, on the 37th of March, 1809.

You, sir, told me that you would say every thing you could for me, to the Governor General; and do all in your power for me. You also desired me to continue near you. Accordingly I remain near your presence. My condition and case is this, that for six years I have kept an army, with which I have plundered numbers of Brahmins, villages, and peasants; and also fought against your forces, and destroyed a great number of your people. I entertained twelve hundred people during these last six years, seven or eight hundred of whom have been destroyed. In these pursuits I have behaved in an unparalleled, ungrateful, and rebellious manner to your Government. No one in this country has behaved so, nor ever will. I did not give up the fort of Adjeegurh, as I promised to do, within two years. Neither did I pay the money due to your Government, as I promised. The greatest ingratitude and faithlessness appears against me. I have not paid any attention or obedience to your Government. I have become infamous all over Bundelcund; all the peasants are in anxious expectation of my death. All the Bramins, traders, servants, sipahees, work people, agents, connexions of my own, and other sects, far and near, all the rajahs, foudjars, aumils, religious, educated, gods, jageerdars, paddarukees, inamees, hyragees, faqueers, and the whole of the inhabitants, great and small, wish every instant to be my last. I would that their wishes were fulfilled. If any part of my existence remain, I had better not stay in this country; my death were better than this. There are four or five people sitting under the fort of Adjeegurh, having called them to you, advise them respecting me, and blow me and my family from the mouth of a cannon. This will be well for me, and it will accord with the wishes of the inhabitants; they will be pleased, and I myself wish for it. If I consent not to this, I am a liar, and wish I may be ruined. I shall be hateful to God.

If I hesitate, God will witness it. I hope you will favour me with this punishment, and it will be well for me. I hope you will reflect upon it, and punish me. I beg of you to give my brothers and connexions each two villages for their support; and if you blow me from a cannon's mouth, it will be better for me. If what I have requested be not agreeable to you, I beg you will exalt me, as you have done other Rajahs, or even more so; but if not, do with me as I have prayed above. The way to exalt me is this, to give me a lack of rupees ready cash, and all my own country, as well as what is mentioned in Captain Baillie's Sunnud, given by him to me.

List of the Villages.

Aman Gunge, Joutpore, Shevrajpore, Retewd, Bhotal, Bunglee, with Rhow and fifteen Khudanee which were given to Rajah Byjee Bahadur, Jypore, Burhoo, and the land and fort of Adjeegurh, and Bhoman, with all the Inamees, Padukees, and Tuppas, and Buchand, Shergurh, Huthooan, and the whole of the Elakah of the Churkareewallah, which was kept possession of by Adjeegurh. Let all these be given to me, as also an hereditary Sunnud for the whole. If this, Sir, should please you, well; but otherwise, pray blow me from a cannon, as I above requested. It will please me well. This last is honour, but the other a mere nothing. I pray you do whichever you please, I shall be content with either. I cannot be content with any thing else. I beg of you to consider it well.

If this cannot be done without the Governor General's orders, I request that a copy of this may be sent him.

If you determine upon any thing differing from my request, pray let me know it; but I hope you may not determine upon any thing else, for your Government is very great, and many have been exalted by it. My request is as nothing to your Government, but great to me. Your fame will be increased by it. Whatever is to be my fate, and whatever is proper, will be my fate; therefore pray determine. What more should I say? I hope I shall have it determined within twenty-four days at furthest. In this country, all the Rajahs, &c. being present, perform their duty. I have nothing left but my head, which is entirely at Government's service. After all, you are master of the country; do whatever you think proper respecting me. No one has obtained such an interview with you as I have: all near you speak ill and well of me; I speak neither ill nor well of any body, nor will. Whoever attends on your Government are good; but as to those who are ungrateful, who beside God can forgive them, except those who are beloved of God, which you are? I hope you will forgive my past bad behaviour. It is well known that the good are spoken well of, and the bad ill. No one beside God, and you, can forgive. Either of what I have said above is better; for if you blow me from a gun, it will be well, because it will be evident to all posterity, and they will say, that I was blown from a cannon! and if you exalt me, it will be known to all the Rajahs. After all, I am supported by your Government; they will do what they think best. May the sun of fortune perpetually shine.

Mr. Richardson, in reply, ordered, that a Perwannah, with a list of villages which had been assigned him, should be addressed to Lutchmun. The following is a translation of the Perwannah.

After the usual compliments. Your wild and extravagant petition, which is entirely void of sense or reason, has been received, and the contents are understood. The reason of your repeated solicitation to

be blown from a gun, which you have reiteratedly urged, is very obvious and plain: all the world know that the British Government, after promising security, never injure, or put any one to death, and that the said Government never deviate from its engagement. After the certainty and conviction of this security, and that there is no possible cause of any danger to be apprehended, every woman, and every unmanly wretch, under these circumstances, may come forward with safety, and make a request such as you have done with a shameless effrontery. But your courage and intrepidity, and regardlessness of life, are well known, from your conduct in the many disputes and battles you have been engaged in, against your neighbours; and every inhabitant of Bundelcund can relate your brave deeds, and you yourself will in your heart have a clear recollection of your own intrepidity on every occasion. If you were really convinced, that in consequence of your request, your life would be in danger, you never would let that request have escaped your lips even, and much less would you have written regarding your faithlessness, and disobedience to the British Government, and your outrages and tyranny to the inhabitants of this province: every letter is literally true, and in this long petition, this one sentence alone is true; yet it is wonderful that after acknowledging your crimes against the British Government, and against Heaven, and your tyranny and oppression to the community, that you should have the effrontery and stupidity to ask to be reinstated in the same power to do mischief! What can this mean? No sensible person can attribute such conduct to any thing but madness, assuming folly, or a desire to insult, and behave disrespectfully to the British Government.

The rulers of government will never think it proper that a man, faithless and false such as you describe yourself to be, should ever be restored to that power, of which he made so bad and mischievous a use. In such a case, the rulers who could so act, would only be considered to be authors of evils and disgrace to their own government, and of the injuries to the community, that might result from such unwise conduct.

In the end of your petition, you have asseverated, and made promises and solemn declarations. Your faithful adherence to your word and engagements is well known, and become proverbial in Bundelcund. The oath of a person, so fearless of God as you have proved yourself to your benefactors by your ingratitude, and to the community by your oppression, cannot be relied upon, or be put faith in, by any one.

From the foregoing you cannot be considered as entitled to, or deserving of any provision or protection whatever from the British Government. But as your wives and children are not partners in your guilt, the British Government, out of humanity, has mercy on them, and is desirous of giving them a maintenance. For this reason the villages enumerated on a separate paper have been selected as a provision for you, and Government shall be written to on the subject, re-

commending that the above villages may be conferred upon you. If Government agree thereto, after having delivered in your Ikraurnameh, binding yourself to allegiance, you will get a Sunnud for the same. If you are not contented therewith, and do not choose to enter into a written engagement, binding yourself to allegiance, obedience, and good order, you shall receive your safe dismissal; and after you have been so dismissed, you shall be no longer under the protection of the British Government: in case of your committing any outrage, that which shall befall you, will have been brought upon yourself. I am the servant of the British Government, and in discharge of my duty, I shall write plainly and strongly to Government, that it is most inexpedient, on every account, to give you the smallest indulgence, beyond the above provision; and I shall also state the evils which would attend giving you more. This being the case, you will see the folly of indulging any hope of obtaining a larger provision.

Statement of the Villages proposed to be given to Lutchmun Sing, as an adequate and permanent provision.

Names of Villages.	* Jummah Kamal
Khorah,	6000 0 0
Bhuddiaw,	1800 0 0
Madurka,	600 0 0
Sookweahoo,	1000 0 0
Injawleek,	11000 0 0
Rajahpore,	1500 0 0
Jahangyrabad,	175 0 0
Dewulpore,	600 0 0
Navadaha,	1500 0 0
Mawkutch,	1000 0 0
Munneepore,	10200 0 0
Sadpaharce,	300 0 0
Razeepore,	350 0 0
Hurnampore,	600 0 0
Kessoepore,	700 0 0
Coolapore,	600 0 0
Huttowah,	4000 0 0
Burrowbee,	1700 0 0
Shahabadpore,	1000 0 0
Tappah Sheorajepore, conformably to the former Sunnud, 21 villages,	16824 0 0
Rupces	44449 0 0

The following is an extract from Mr. Richardson's report to Government, regarding Lutchmun's petition.

To N. B. EDMONSTONE, ESQ., *Secretary to Government in the Secret and Political Department.*

SIR,

Several circumstances and reasons have combined, to prevent the possibility of my laying my sentiments with respect to the provision I would recommend for Lutchmun Dowah before the Right Honourable the Governor General in Council at an earlier period. Those circumstances and reasons I shall proceed to submit, as succinctly as in my power, to his Lordship's consideration; and I trust they will be found to have been of sufficient weight, fully to account for, and excuse the delay, that has unavoidably occurred in making this communication.

2. After the arrival of Lutchmun Sing at Bandah, I did not deem it proper or political to make the first overture for the discussion to determine on the provision which the spontaneous bounty of the British Government should think proper to bestow upon him, because I am so well acquainted with the disposition of these people, from experience, that I was perfectly aware, that if I shewed the least anxiety on the subject, it would only operate to give rise to unreasonable and excessive hopes in Lutchmun Dowah, and induce him to make the more wild and extravagant demands.

3. Notwithstanding that I acted on the above principle, and from the above conviction and motives, yet I let slip no opportunity in conversation (of which I had many) of hinting both to Lutchmun Sing Dowah, and to his Vakeel, that he might expect from the known liberality and humanity of the British Government, to be restored to the possession of "*some part*" of his former territories.

4. After all this cautious and circumspect conduct, which I am convinced in my own mind conveyed to him pretty plainly what I intended it should convey, this incorrigible man has had the folly to come forward with, and press upon me, a petition, of which No. 1 is a copy, and No. 2 an English translation. My answer thereto is exhibited in No. 3; the copy of my Perwannah in reply to the foregoing petition, No. 4, is a translation of the same.

5. I am sensible that the terms of my reply, on general ideas of delicacy and propriety, would be condemned by all men unacquainted with circumstances, as harsh and unbecoming. I am not, however, I hope, disposed to harshness, or to wish wantonly to insult misfortune, unable to retort; but when his Lordship in Council reflects, that I have now been in this province a considerable time, and have had much intercourse with its inhabitants and chiefs, and many opportunities of making correct observations on their manners and dispositions, (which observations have only tended to confirm me in the knowledge, that the more mildness and delicacy with which they are treated, the more unreasonable, wild, and extravagant do they become, not only in their hopes and expectations, but in their demands,) I hope my reply will be approved.

6. That the above is literally the case generally I can aver, and the correspondence which I have heretofore carried on with Lutchmun Sing Dowah, and his reply thereto, (many reports and translations of which have been submitted to the Right Hon^{ble} the Governor General in Council,) are, I think, clear proofs of its having always been the case with Lutchmun Dowah himself, and that mildness of language and manner only served to lead him the more aside from the paths of propriety.

7. After the receipt of the present petition, I dictated the accompanying Perwannah, in reply, and delivered it to my native assistant, Dewan Nassir Ally, and caused him to read and understand its contents clearly. The said Dewan, by my instruction, sent for Lutchmun Sing Dowah, and privately and personally read and explained the Perwannah to him, and gave him the option "to receive back and withdraw his petition, in which case he (the Dewan) would represent the same to me, and endeavour to induce me to cancel and suppress my Perwannah in reply;" but this perverse and senseless barbarian (for I cannot call him a man) remained immoveable in his purpose, and persisted in his petition being received, and laid before the Right Hon^{ble} the Governor General in Council.

8. Lutchmun Sing further added, that if neither of his requests (that is to say, his being blown away from a gun, or his reinstatement in the fort and the territories included in his former Sunnud, and in addition his receiving the gift of one lack of rupees,) should be complied with, he begged to have a Chupprassy to accompany and protect him, his children, and family, to Benares, that he might there perform his devotions, and worship his God. The Dewan replied, that there was no necessity for "a Chupprassy to accompany him to Benares." Lutchmun answered, that if he had not a Chupprassy with him, "he should not be able to carry his life out of Bundelcund: for as soon as I leave Bandah, some one or other will murder me, and you have engaged for my safety. It is therefore necessary that you protect me to a place of safety." Upon this the Dewan stated, "that he (Lutchmun) should be escorted and protected to any place without the British territories; for that he did not know, and could not therefore answer whether the British Government, in case of his (Lutchmun's) not agreeing to receive the provision which Government should be pleased to confer on him, would allow him to remain within the British territories; and that if even the Government did permit him to reside in their territories, that he, in that case, must be amenable to the courts, the laws, and regulations in force there, like any other individual." Lutchmun replied, "I have no place of refuge to seek without the Company's dominions, that I can go to."

9. From the tenor of Lutchmun's conversation, and some hints dropped by himself and his confidants, I am induced to believe, that after having gone to Benares, and finding that his extravagant demands

cannot, and will not, be complied with, he will of his own accord, request to receive a monthly allowance in money.

10. In the above opinion I have confidence ; and if it should prove well founded, and he should actually make the request I have anticipated, I am decidedly of opinion that a sum not below one thousand, and not above fifteen hundred rupees per month, is perfectly sufficient, and that more, in my humble judgment, would be improper and unnecessary.

12. I did not deem it proper, or becoming the dignity of Government, after his persisting in delivering in the petition now forwarded, to have any personal interview with Lutchmun, or to enter into any verbal discussions with him ; and having implicit confidence in the abilities, address, and integrity of my native assistant Nassir Ally, which I have experienced and found successful on many occasions, but more specially in effecting arrangements with Lutchmun Dowah, Pursaram, and Rajah Ram, which I was compelled to intrust entirely to his intermediate agency. But particulars of this native's services are already before Government, and it will doubtless have appreciated them according to their merits.

13. Moreover it is absolutely necessary, in order to make any arrangement with men little removed from barbarism, ignorant of the principles of enlightened government, and in all respects quite uncivilized, to have some native agent on whom you can depend, as the channel of communication.

14. My reasons for fixing upon the villages stated in No. 5, as an adequate provision for Lutchmun Sing, are because, with the least good, or even common management, I really think their produce would be an ample and liberal provision for this man, whether Government adverts to his wants, his rank, or his conduct, or whether it considers what is due to humanity, or expedient or incumbent on principles of policy, with a view to the future peace of this province.

15. If this man should be reinstated in the whole of his possessions, or receive more than I have stated, in my humble, but decided opinion, many evils would inevitably arise.

I. No punishment for disobedience, rebellion, or plunder, would in future be feared, because all would perceive and imagine, from this example, that ultimately they would not forfeit or lose their possessions for similar conduct ; and they would be likely to agree, " that if even a square surrounded with an old wall, which is in reality of no value, should be taken from them by Government, what would be the loss, but of very little consideration or importance."

II. Many of the villages included in Lutchmun's Sunnud, such as the Tuppa of Anaun Gunge and Joytpore, were never in his possession. Those places are now in the possession of the young Rajah Kisshore Sing, being a portion of his hereditary possessions. Moreover, many of the villages in the Perwannah of Powey, which are included in Lutch-

mun's former Sunnud, and which were in the possession of the servants, followers, and adherents of Rajah Bukht Sing, are now in the possession of the Rajah Bukht Ballie himself, the Rajah having received a Sunnud for the Perwannah of Kutrah and Powvey.

III. If after all this, Government should direct the places alluded to be again taken from the above Rajahs, and given to Lutchmun Sing, much cause of dissatisfaction would be given, and these people would not be able to reconcile to their minds, on what principle the refractory and rebellious received the reward, which they conceive the due of the obedient and orderly only. The ill effects are too obvious to require comment.

IV. Every chief in that province has at one time or other experienced such outrageous and lawless conduct at this man's hands, as to be irritated to the greatest degree against him, in so much that I am confident most of them would ardently seek his life. If therefore, they were to see him restored to his former power of doing mischief, instead of looking to the British Government for protection, they would in despair most probably give place to different sentiments in their minds, which might lead to confusion and great disorder, most injurious to the British interests in its consequences.

16. I am perfectly confident, that the feelings I have described, and which I have thought it my indispensable duty to apprise Government of, are the sentiments entertained on the subject by all the chiefs in this province. And I do not know that I can adduce a stronger corroborative proof that the above is actually the case, than by stating that Rajah Ram, a man of uncommon shrewdness, and the most direct plainness, of his own accord, expressed in very strong and unequivocal terms, that the sentiments and feelings I have stated, were those entertained by every chief in Bundelcund, and himself amongst the rest.

17. The provision, which after the most mature deliberation, I have deemed sufficient for Lutchmun Sing, on every principle of humanity and justice, is as nearly as possible one third of the possessions included in his former, and now forfeited Sunnud, the nominal Jummah of which portion is 44,449 rupees; and by attention to its cultivation, its actual produce will not be less than 30,000 rupees per annum: and in this portion, I have, to ease him from the apprehension he expresses of assassination, included one small puckah fort above the Ghauts, called Sherajepore, as a place of security for himself and family.

18. In the selection and appropriation of this portion, I have been particularly careful to ascertain its local situation and vicinity, and to select all of the villages so compactly, that they lay in a united compass, so as not to intermix with the other at present unallotted portion, or with the lands of other chiefs. This amongst other unavoidable causes, has been one which has operated to delay this report.

19. In order to bring the points I now recommend, as clearly and distinctly before the Honourable the Governor General in Council as possible, I shall conclude this elaborate, but I think necessary discus-

sion, by stating the three points, one or other of which only, in my judgment, ought on any account to be conceded to, or allowed to Lutchmun Sing Dowah.

20. No consideration, in my judgment, should induce the Governor General to give Lutchmun Sing a single village more than those stated in No. 5 and 6.

21. Suppose Lutchmun Sing to reject or refuse to accept the above possessions, selected for, and afforded to him as a permanent provision, and to request leave to retire to Benares on a monthly stipend, in my humble judgment, he ought on no account to be indulged with a larger stipend than 1000 Rupees, or at the very most 1500 Rupees per month. Indeed were I to decide the point, I never would give him more than 1000 Rupees per month. This sum, it will be remembered, was thought sufficient for the Rajah Amerow Geir, the brother of Himmutoo Bahadur, who possessed the greatest part of the province of Bundelcund, and was, in fact, compared to this savage, a man of rank and consideration.

22. Supposing what is almost impossible, that this man, who by his own confessions is almost an outcast from the human race, should require it, in God's name, let him go wheresoever he pleases. If he desires it, let him go beyond the British territories, in safety, in whatever direction he desires, or let him remain within the Company's dominions. In the first of these cases, we have nothing to do with him, till he commits some act of aggression against the British territories, or those of such chief as we may think proper to protect. The case will then of itself point out the means of punishment, and remedy: and I am confident, were he to attempt a life of plunder or depredation, he would not be alive a week. He is universally detested, and he has neither the wits, the activity, the ability, or the courage to make him of any consideration. In the second case, he will be subject to the laws and regulations of the Company's dominions, and any breach of them they will punish.

I have now endeavoured, with hearty zeal, and some thought and labour, to impress upon the mind of the Right Honourable the Governor General in Council, sentiments which are deeply engraven on my own, and of the truth of which I have the strongest conviction. For any errors in my judgment that may appear, or for the tediousness of the discussion, I trust my motives will in his Lordship's estimation, prove some excuse.

The following is the reply to the above.

To J. RICHARDSON, Esq. Agent to the Governor General, Bundelcund.

SIR,

I am directed to acknowledge the receipt of your dispatch of the 2d instant, communicating your sentiments regarding the nature and extent of the provision to be assigned to Lutchmun Dowah.

2. The Right Honourable the Governor General in Council approves the selection of the lands which you propose to appropriate for the

subsistence of Lutchmun Dowah, the local situation of which appears well calculated to prevent the occurrence of disputes between him and his neighbours, and to afford him security against any hostile attempts on their part.

3. His Lordship in Council, however, adverting to the unsettled habits and faithless disposition of this Boondelah, would prefer granting him a pension in money, subject to the condition of his residing at Benares.

4. Lutchmun Dowah having, since the period of his surrender of the fort of Adjeegurh, been in the receipt of Rupees 50 per diem, and having been led to indulge hopes that a suitable provision should be made for him, his Lordship in Council deems it equitable that the amount of the pension should be 1500 Rupees. It is desirable that he should accept the proposition of retiring to Benares, as his ignorance and depravity would prevent him from managing his Jaggeer in such a manner as to insure him a permanent provision, and his distress might perhaps force him again to have recourse to his former depredations.

5. Under this view of the question, his Lordship in Council desires that you will communicate to Lutchmun Dowah the proposition of Government to allow him a pension of 1500 Rupees, on condition of his retiring to Benares; and you will accompany the offer with such arguments and observations as may appear to you best calculated to obtain his acceptance of that mode of provision.

6. In the event of Lutchmun Dowah's refusal of those terms, you will then again offer to his acceptance the villages which you have selected as a provision for him; and in the event of his refusing that offer also, it will remain for consideration whether to compel him to quit the Company's territories, or to place him under some degree of restraint, in a situation where he may not possess the means of mischief.

5. Should Lutchmun Dowah accept the provision offered to him, a portion of his former lands sufficient for the liquidation of the amount of the pension, must of course be reserved by the British Government.

The following documents will afford the reader the only information we possess of Lutchmun Dowah's subsequent fate.

To N. B. EDMONSTONE, ESQ. *Secretary to Government in the Secret and Political Department,*

FORT WILLIAM.

SIR,

I beg leave to state, for the information of the Right Honourable the Governor General in Council, that Lutchmun Dowah has broken his parole, and absconded on the night of the 25th instant. He is gone off without his arms or clothes, and on foot; having discontinued to wear his turban, and assumed the appearance of a faqueer, since his defeat by, and flight from Gopaul Sing, near two years ago. The only per-

sons gone with him are Guneshee, a barber, Herey Gowalah, and Nindlaul and Bewanny, two Bramins.

2. Lutchmun Dowah, in this most extraordinary conduct, has observed the utmost secrecy, and eluded and deceived his own people, who are all in astonishment. His first cousin Duroun Sing, his Vakeel Rakeen, and Sirdar Sing, his *Khass Kullum*, or secretary, with about fifty of his followers, are here; and know, or profess to know, nothing of where he is gone, or of his intentions; and I believe the fact to be, that they are as ignorant on the point as they profess to be.

3. Lutchmun's flight was reported to me yesterday morning early, and I did not fail to take immediately, indeed instantaneously, all the necessary steps that were in my power, either to prevent the possibility of his getting clear off, or to guard against his doing mischief.

4. I communicated his flight to the Commanding Officer in Bundelcund, and to all the officers commanding posts, including Captain Lamb above the Ghauts; and dispatched letters to all the Bundeelah chiefs, for his apprehension, denouncing the displeasure of the British Government against any who should offer him aid or shelter.

5. The mother, the wife, and the family of Lutchmun Dowah, consisting of one son and three daughters, being in Noa-shehur, the town close to the fort of Adjeegurh, by the express request of Lutchmun Dowah, and under the British protection, under the circumstance of Lutchmun's having absconded in this most unaccountable and deceitful manner, I have thought it my duty to direct Major Cuppage, the officer in command at Adjeegurh, to secure Lutchmun's family, and to allot them accommodations in the fort for the present. I have been mindful in this step (which I did not adopt without thought and consideration,) to instruct Major Cuppage to be careful that the persons belonging to Lutchmun Dowah's family, whom he might secure, should suffer no ill or harsh treatment; and I inclose a copy of my address to the above officer, for his Lordship's satisfaction.

6. I am aware of the abstract justice, and the incumbency of the principle adopted by the British Government, of not extending to the innocent the punishment of the guilty; and God forbid that I should ever be an advocate for such conduct. But in the present case, I conceive it would be doing unwisely, not to act so as to prevent Lutchmun taking his family, who are under our protection, out of our reach; and by so doing removing one strong restraint upon his actions, should his intentions be evil. The humanity of the British Government will of course be exercised in liberating these people, as events and circumstances may render proper.

7. I have in this acted according to the best of my judgment, and have not, however delicate the measure, hesitated to adopt it, believing it to be for the public good; for which I hope I shall at all times prove myself willing to encounter some hazard.

8. In consequence of the receipt of your letter of the 29th ultimo, in reply to my report communicating my sentiments with respect to

the proposed provision for Lutchmun Dowah, I had two interviews with him, and in both used every argument in my power to induce this perverse man to accept of the monthly stipend at Benares, according to the wishes of Government, as conveyed in your letter above alluded to: in favour of which, considering his own comfort and happiness, there are many obvious, and in fact strong arguments, which it were useless here to enumerate. He persisted throughout the whole of the interview (which was of considerable length) to refuse to accept of the stipend at Benares; and he adhered to this refusal through great part of the second meeting also, with invincible obstinacy. I then gave him the alternative of receiving the lands which I had selected, and stated in my reports, and for a considerable time he continued to refuse this alternative likewise. I then addressed him most seriously, and with all the solemnity and force in my power, laid before him the ill consequences of his obstinacy, in forcing in this manner Government to decided measures, and necessitating its compelling him to quit the British territories and protection, which he knew must be fatal to him. He seemed startled at this hint, and requested four days to decide which of the offers he would accept; and yesterday was the day on which he was to have given in his answer. Such conduct baffles all conjecture, and eludes reason.

9. My own belief is, that he is either gone off to push his way to Calcutta, or that he has concealed himself somewhere for a time, to get rid of the importunity and demands of his people, and that his intentions are, when they are dispersed, to appear to accept of the monthly stipend at Benares. He once before hinted his desire to conceal himself from his own people of all descriptions, and asked me if I would connive at it; to which I replied, that I would have no concern with any clandestine or deceitful conduct, and that there was no necessity for it, as his followers could not molest him, while under our protection.

10. Finally, whatever be his motive or his intentions, I am perfectly confident he has not the abilities or the power to effect serious disturbance; and on this score I am so entirely at ease, that were it not apparently a presumptuous confidence in my own opinion, I would pledge my reputation for common understanding even on the result. I therefore hope and trust that Government will annex no sort of importance to this act of folly, or entertain the smallest apprehension of its consequences.

To MAJOR CUPPAGE, Commanding at Adjeeghur.

SIR,

Immediately on the receipt of this letter, I request that you will secure the wives and family of Lutchmun Sing, that faithless traitor having broken his parole, and absconded.

2. You will be careful that no insult is offered to the above people; and you will be pleased to allot some convenient apartment in the

fort, and allow the necessary attendants to have access, for their present accommodation ; and inform me of the rank and description of those you may have secured.

3. I request that you will be upon the alert ; and should Lutchmun Dowah appear in your neighbourhood, I request you will immediately apprehend and seize him, and hold him in close and secure confinement, till further instructions.

(EXPRESS.)

Service.

To JOHN RICHARDSON, ESQ. Agent to the Right Honourable the Governor General.

SIR,

I have the honour to acknowledge the receipt of your express of yesterday's date, which was delivered to me about one o'clock last night, and to acquaint you, that a little before day-break, the whole of Lutchmun Sing's family were secured, and in which are included Adjudeah Persaud's.

The male part are all in the fort, and I am taking every possible measure to procure bearers to bring up the families, to whom I have allotted the most convenient apartment in the garrison.

You may be assured that I shall, as well from inclination as from duty, be most careful that no insult is offered to any of those poor people.

The enclosed is, I trust, a correct list of those secured. I shall be upon the alert, and should Lutchmun Dowah make his appearance in this neighbourhood, I will do my utmost to secure his person.

P. S. I am just informed by the officer commanding the party at Terrownie, that Bazoo Roy, Lutchmun Sing's father-in-law, has murdered his mother, aunt, wife, three daughters, and his son, and afterwards cut his own throat. This was done with a small tulwar belonging to the son, which the women had hid amongst some clothes.

Lutchmun Sing's mother.

Ditto ditto aunt.

Ditto ditto wife.

Ditto ditto three daughters.

Dussraze Sing, son of Lutchmun Sing.

Bazoo Roy, father-in-law to Lutchmun Sing.

Puddau Sing, uncle to ditto.

Poorum Sing, cousin to ditto.

Gunnesse jee, uncle to ditto.

Bucket Sing, ditto to ditto.

Durreah Sing, nephew to Adjudeah Persaud.

Surdar Sing, brother-in-law to ditto.

Adjudeah Persaud's mother.

Ditto brother's wife.

Ditto son.

Ditto brother's two sons.

Sepoys in the service of Lutchmun Sing :—Heerah Doss, Doweknd Sing, Meeruk Sing, Omrow Sing, Buckut Sing (1st,) Poorun Sing, Jugger Sing, Buckut Sing (2d,) Ram Sing, Banjor Sing, Zallim Sing, Buckut Sing (3d,) Gazic Shaw, Pungu Dowah.

(EXPRESS.)

From MAJOR CUPPAGE, to JOHN RICHARDSON, Esq. Agent to the Governor General, Bundelcund.

SIR,

I had yesterday, by express, the honour to acquaint you, that agreeably to your instructions, no time was lost in securing the family of Lutchmun Dowah.

The unfortunate circumstance of the murders which were committed by the infatuated Bazoo Roy, who was instigated by the women, could not have been foreseen. I took every possible means to reconcile the parties to their situation, and sent down Gunnese Sing, who had charge of the families, to assure them that every thing would be conducted agreeably to their wishes : in fact, if this man had any thing to do in the melancholy business which took place, he most completely deceived me, for he left me apparently highly satisfied with every thing I had done.

The enclosed account of the affair from the officer who commanded the party, I doubt not, is tolerably correct. There being a strong force in Terrownie under Major Stewart, I shall not order up the female part of Adjudea Persaud's family, until I receive further instruction from you on that head, as they beg and pray to be allowed to remain below, and sent to Banda. The inhabitants are perfectly quiet, and free from all alarm.

I have, &c.

P. S. I am just favoured with your letter of yesterday, and have in consequence ordered the guard to be taken off Adjudea Persaud's family ; but as I have sent you a list of the names and rank of the people confined in the fort, I shall in consequence of what has happened, wait your further orders for the whole or any part being liberated ; and I have told them that they may expect to be enlarged by to-morrow.

From MAJOR STEWART, to LIEUTENANT DUNLOP, Adjutant 2d Battalion 26th Regiment Native Infantry.

SIR,

I beg leave to inform you, for the information of the commanding officer, that Bazoo Roy, who being recommended to me by Mr. Richardson's Chuprassey, as a person particularly qualified (from his near relationship to Lutchmun Sing,) to take care of his family, and to explain to them the necessity of their complying with the order to return to the fort, I accordingly sent for him, and he seemingly agreed with me in every thing, and went off to pack and bring out the proper-

ty of the family. While he was employed in this business, I was informed by the native officers on the guard of the gateway, that they suspected, from no noise being made within, an intention on his part of sacrificing the whole ; and that the women had also declared that they would never enter the fort alone. I immediately gave orders to bind the man, and also the women, and again to search for and seize all weapons. I was going to see these orders executed, when on entering the compound, I was met by the Subadar, who went on before me, and who said, that he had just seen Bazoo Roy sitting at the door of the Zenannah, with a sword held to his throat, and surrounded with the women whom he had murdered. I then attempted to seize him ; but before I could execute my intentions, he had succeeded in shutting the door, and having previously set fire to the house, cut his own throat behind it. On breaking open the door, I was presented with the dreadful scene of seven persons (six women, and the infant son of Lutchmun Sing,) with their throats cut, on the floor, covered with blood. The weapon with which this abominable crime was committed, must have been concealed by some of the women in their clothes. The infatuated wretch Bazoo Roy, who had thus imbrued his hands in his kindred's blood, was however still alive, not having completely succeeded in the attempt on his own life.

I lose no time in sending him up, under a guard. I have every reason to suppose that Gunnese, whom the commanding officer sent down to assist his family in making the necessary arrangements for their departure, and likewise the man who attempted to kill himself in the morning, were principal instigators of this melancholy event ; and have in consequence sent up the former under a guard, and the other I have confined here, and shall send him up, agreeable to the commanding officer's orders, in the evening.

I am, &c.

From MAJOR CUPPAGE, to J. RICHARDSON, Esq. Agent to the Governor General, Bundelcund.

SIR,

I have the honour to acknowledge the receipt of your letter of yesterday's date, which I got about one o'clock last night ; and to acquaint you that all the prisoners, except Pooran Sing and Gunnese Sing, were enlarged early this morning. Those two men I shall send to you ; for the latter told me, that they, and the wretch Bazoo Roy, had just before the horrid murder took place, been conversing together, but will not acknowledge that he had been at all privy to the fatal transaction. The former had wounded himself in the breast with his tulwar before he was disarmed, but not dangerously : all the arms, therefore, of every description that could be found, were collected, and a guard placed over them, and the house that the women were in, I am told, was carefully searched by the Brahmin whose habitation it is, a Subadar of the same cast, and your Chuprassey ; but the women were not

seen, and the utmost delicacy towards them was observed. Where the small tulwar, with which the deed had been committed, was concealed, is not known.

I have requested Major Stewart to secure the person of the Brahmin, as he lived in the same house, that he may be sent to Banda to be examined.

Every thing had succeeded in the best possible manner, until this diabolical business took place, which no person could have imagined. Bazoo Roy was sent up to the fort on a Doolee. The wound in his throat was dressed by the doctor; but he died during the operation. The only words he spoke, were to call for a little water. The surgeon says, he could not have died from the wound, but from having taken opium, or some other drug; and I have little doubt but that the women took opium, and gave it to the children.

I have sent down Pooran Sing, and Gunnese Sing, under a guard, to Major Stewart, in order that he may obtain all possible information regarding the murders, and Lutchmun Sing's property; and I have desired Puddum Sing and Doorjen Sing, to be present when the inventory is taken, and for every thing to be carefully sealed up by them, as well as by Major Stewart, that the whole may for the present be safely lodged in the fort.

I beg leave to inclose you a copy of a letter I have just received from Major Stewart, for your consideration.

I am just favoured with your letter of yesterday, of which Doorjun Sing was the bearer, but whom I have not seen. It was sent up to me from Terrownie by Major Stewart, also a duplicate by dawk; and beg leave to say, its contents shall be duly attended to.

I have this instant received a note from Major Stewart, which I beg leave to copy for your information.

Doorjun Sing has proposed the taking his own, and Adjudea Persaud's family to Kisson Poorah, in Rajah Ram's Jagheer, to which, from the instructions of the A. G. G. there can be no objection, I presume. He says that Lutchmun is only gone to Benares to bathe, and that he informed Mr. Richardson's Dewan, Nasserally, that he would do so. This I have my doubts of.

In reply, I wrote Major Stewart, that we must act agreeably to your instructions; and sent him the duplicate of your letter for his guidance; and told him, that I would by this day's dawk communicate the contents of his note to you, and for him to recommend to Doorjun Sing, to wait your answer, which I would get the day after to-morrow. I also told him, that I had heard to-day from the Chowdery of Noashehur, that Lutchmun Dowah had passed within seven coss to the westward of this, on his way up the Ghauts, with three horses, and a very few attendants; but whether the information be true or not, I could not say.

I have, &c. &c.

P. S. Doorjun Sing wishes that Poorun Sing and Gunnese Sing should be given up to him; but I must first have your orders for doing so.

From MAJOR STEWART, to MAJOR W. CUPPAGE, Commanding at Adjecgurh.

SIR,

I have the honour to acknowledge the receipt of your instructions respecting the property of the family of Lutchmun Sing, and shall direct an inventory to be made immediately of it, in the presence of Pudden Sing.

From what I can learn, the only existing probable accomplices in the perpetration of these atrocious murders, were Gunnese and Poorun Sing; the Bramin, the owner of the house in which they resided, not having been seen near the place during the course of that day. Should, however, any thing transpire to induce me to conceive him privy to the atrocity, he shall be secured.

The family of Adjudea Persaud have represented to me, that they are totally destitute of all means of subsistence, and that no assistance has been afforded them since their residence at Terrowny. They also request another residence may be allotted them, their present one not being weather proof.

From MAJOR CUPPAGE, to J. RICHARDSON, Esq. Agent to the Right Honourable the Governor General.

SIR,

I have been duly honoured with your letter of yesterday; and beg leave to observe, that my subsequent communication leaves me nothing to say in reply, further than that my conduct towards the family of Adjudea Persaud, &c. &c. having met with your approbation, is highly gratifying. I beg leave to inclose you a copy of a note I have this instant received from Major Stewart, and to transmit you the whole of the papers alluded to in it. I have not the least doubt, but that, when the women and children of Lutchmun's family had their throats cut, they were at the time lying on the ground in a state of insensibility. Doorjun Sing has made application for money to defray the expense of carrying the bodies of the unfortunate family to Allahabad, which he states at 500 Rs.; 125 Rs. he says, was expended on Adjudea Persaud alone, for the same purpose.

I have, &c.

From MAJOR STEWART, to MAJOR CUPPAGE.

The old woman, Lutchmun's aunt, says the mother received a chit a short time ago from him; but was not informed of what it contained.

All the papers found, I send up to you, as no person here reads Bundeelah, whom I can trust. Poorun says, it was always the purpose of the family to destroy themselves, if forced up, or indeed put under any restraint.

Doorjun Sing says, his family would have done the same, if carried up; and the Khass Kulluin arrived from Banda with him says, Lutchmun's family were provided with poison, ever since the detachment came before the place; so that there is every reason to conceive it a long premeditated business, to be regulated by circumstances. I have directed Gunnese and Poorun to be kept apart, under the restrictions mentioned in the instructions of A. G. G.

The account of the property is taken; and had better be removed: it will require forty or fifty coolies. The place was also dug up, but nothing found.

From the Secretary to Government in the Political Department, to J. RICHARDSON, Esq. Agent in Bundelcund.

June 6, 1809.

SIR,

I am directed to acknowledge the receipt of your letter of the 27th ultimo, reporting the rejection by Lutchmun Dowah of the several offers which you were instructed to make to him for his future subsistence, and his subsequent flight from Banda.

2. The Governor General in Council is surprised to learn, that Lutchmun Dowah had adopted such a treacherous and imprudent line of conduct, and entirely approves the measures which you have pursued for his apprehension, and the orders which you issued to the officer commanding at Adjeegurh, for placing the family of Lutchmun Dowah under restraint.

3. His Lordship in Council deems it advisable, in order to facilitate the apprehension of Lutchmun Dowah, that you should transmit to me without delay, a description of Lutchmun Dowah's person, and point out any peculiarity in his appearance and manner, the knowledge of which, notwithstanding his disguise as a faqueer, may lead to his detection.

4. You will be pleased also to circulate similar information to the Magistrates of the districts through which you may consider it probable that Lutchmun Dowah may attempt to pass, or in which he may endeavour for the present to conceal himself.

I have, &c.

From the Secretary to Government Political Department, to J. RICHARDSON, Esq. Agent to the G. G. Bundelcund.

SIR,

I am directed to acknowledge the receipt of your dispatch of the 29th ultimo, concerning the measures which you adopted for securing the family of Lutchmun Dowah, and the circumstances of their subsequent murder by Bazoo Roy.

2. Your letter of the 2d instant, inclosing copies of your correspondence with several public officers on the subject of the late transactions, has also been submitted to Government.

3. The Right Hon'ble the Governor General in Council has received the intelligence of the atrocious conduct of the late Bazoo Roy, with sentiments of extreme regret and astonishment; but his Lordship commands me to state, that however much he laments the occurrence of this melancholy catastrophe, the event does not justify the slightest imputation of blame on account of the resolution which you adopted to prevent the junction of Lutchmun Dowah with his family, by requiring them to resume their residence in the fort. No human wisdom could have foreseen a consequence so tragical, to a measure differing only from a practice the most common, on occasions less urgent, among the native [here some words are obliterated in the original] was to be carried into execution.

The tenor of your correspondence on the occasion, and your proceedings as described in your dispatch of the 2d instant, are considered to have been perfectly proper; and his Lordship will trust, that the judicious measures which you have taken for the apprehension of Lutchmun Dowah will ultimately be successful.

I have, &c.

From Mr. RICHARDSON, to J. D. ERSKINE, ESQ. Magistrate, Allahabad.

SIR,

January 2, 1809.

Having gained intelligence of Lutchmun Dowah's having been met on the high road to Allahabad, as explained in the Rubecaree, which I have the honour to inclose, I have deemed it my duty to dispatch this letter by express, and earnestly request you will adopt the most prompt and active means in your power, for the apprehension and security of Lutchmun Dowah's person, taking every possible precaution to deprive him of the means of self-destruction; and that you will have him lodged safe in the fort of Allahabad, if taken, until the orders of Government shall be received respecting him.

2. I have dispatched my Jemadar Hircarrah, a careful active man, with a party of ten Burkundauze from the police department at this place, with orders to seize Lutchmun, and the four men said to be with him, and to deliver him over to you; and directed him to take the precautions mentioned in the foregoing paragraph, to prevent Lutchmun's destroying himself; and to call upon the nearest police officers of your zillah for aid, should assistance be necessary. If you think it necessary, or likely to be conducive to the seizure of Lutchmun Dowah, my Jemadar and party will follow the pursuit to Benares. I have directed him to ask your orders on that point, and to act according to them.

I have, &c.

Proceedings of the Agent Governor General, on the 29th May, 1809.

This day Lal Sing, sepoy, belonging to the Volunteer Battalion, appeared and represented:—"I was returning from my own house, which is in the Pergunnah of Dallamow, the day before yesterday, at the village of Shahpore, in the Pergunnah of Futtehpoore, which is five coss to the southward from Futtehpoore, on the public road, at the door of

a Bramin, of the cast Shookal, whose name I do not know, I met with Lutchmun Sing Dowah, the Killedar of Adjeegurh. I observed that the said Dowah was sitting down, and a man was preparing and baking bread. I who knew the said Dowah, enquired at him, Where did you come from? He replied, I have come from Hatta. Again I asked, From what Hatta: that which is near to Keitah, or that which is above the Ghauts? I then said, I know you, you are Lutchmun Sing Dowah. Why do you tell a falsehood? He again denied himself. I said, At the time you came down from the fort of Adjeegurh, I was present, and know you very well: speak the truth. Upon this, he again said, I am a Boondelah, but I am not Lutchmun Sing. At Khoosroopore, which is about three coss from Futtehpoore, on the banks of the river Ganges, which having crossed, I shall go to Adjudea (Fizabad,) and from Adjudea I shall proceed to Allahabad, and from thence I intend going to Benares. After this, I proceeded on my journey, and at Tindwarry I yesterday met Omrow Sing, Chaprassey, and informed him of the whole particulars of my having met with Lutchmun Dowah aforesaid. He the Chaprassey went on with all possible haste, and it is most likely has come up with him." It was asked, How many persons were with the said Dowah; and had they any arms in their hands, or otherwise; and were they on horseback, or not. Sepoy replied, That there were four other persons with him, and there were no arms with any of them, they were all empty handed; and he (Lutchmun Dowah) was riding on a small roan-coloured mare. Ordered, that Nyne Sing Jemadar, of this department, with 10 Burkundauze and a written order, be dispatched to seize Lutchmun Dowah; and directed, that in the event of Lutchmun Sing's being taken, he shall be conveyed with all care to the Magistrate of Allahabad, that the aforesaid officer may with all care lodge Lutchmun Sing in the fort of Allahabad. It was also ordered, that a copy of the present proceedings be forwarded for the information of the Magistrate aforesaid.

I have, &c.

Chief Secretary's Office, 5th July, 1309.

The Chief Secretary reports to the Board, that yesterday afternoon, Lutchmun Dowah, the late Killedar of Adjeegurh, reported his arrival at the presidency to the Persian Secretary, in a note of which a translation is annexed. Immediately on the receipt of this intelligence, the Chief Secretary desired Mr. Blacquiere, the Magistrate of the town of Calcutta, to adopt measures for securing the persons of Lutchmun Dowah and his attendants. It appears that he came the whole of the way from Bundelcund by land, and on foot; crossed the river, and landed at a private ghaut belonging to Samul Doss, and hired a house the property of that person, and in the vicinity of his dwelling. Mr. Blacquiere proceeded in person to the house, and on the plea of removing him to a more commodious habitation, induced Lutchmun Dowah to accompa-

ny him to a house near his own, which Mr. Blacquiere had intermediately prepared for his reception, and in which he was securely lodged, and guarded.

Mr. Blacquiere reports, that Lutchmun Dowah does not appear uneasy under the restraint imposed on him, and merely expresses a solicitude to have an opportunity of representing the circumstances of his case to Government. Mr. Blacquiere observes, that from his demeanour and his language, it is evident that he is uninformed of the melancholy fate of his family. Of the four persons reported by Mr. Richardson to have accompanied him in his flight, two only have arrived : the other two, with several connections and servants of Lutchmun Dowah, are stated by the letter to be on their way, being unable to keep pace with the rapidity of his march.

Mr. Blacquiere observes, that the ghaut at which Lutchmun Dowah landed, being private property, no police peons were stationed there, —a circumstance which will account for his having eluded the vigilance of the police officers.

The instructions which the Chief Secretary gave to Mr. Blacquiere were, to afford to Lutchmun Dowah every accommodation and indulgence consistent with the security of his person.

The Chief Secretary has addressed circular letters to all the Magistrates, to whom orders were issued respecting the seizure of Lutchmun Dowah, apprizing them of his apprehension ; and a similar communication has also been transmitted to Mr. Richardson, and to the Resident at Lucknow.

Translation of a Note from Lutchmun Sing Dowah, to the Persian Secretary.

Received July 4, 1809.

After offering to you my humble respects, and expressing a desire for the honour of a personal interview, I beg leave to represent to you, that I am ruler of the territory of Adjeegurh, in the province of Bundlecund. My case was brought under the consideration of Mr. Richardson, the Judge of Bundlecund ; but that gentleman did not effect any satisfactory adjustment of it : I therefore formed the resolution of paying my personal respects to the Right Honourable the Governor General ; and I am accordingly arrived at the Presidency, with a few attendants.

Understanding that you possess the power of settling the affairs, great and small, of all individuals like myself, I send my Vakeel, Salig Ram, to your enlightened presence, who will have the honour of paying his respects to you. I hope that you will have the goodness to signify your permission for me to visit you, that I may state to you in detail the circumstances of my situation ; after which I will do whatever you may be pleased to desire.

For the rest, may your boundless favour continue to increase daily.

From the Secretary to Government, to CAPTAIN H. WOOD, Executive Officer,

FORT WILLIAM.

5th July, 1809.

SIR,

I am directed by the Right Honourable the Governor General in Council to desire, that you will adopt measures for immediately clearing out the apartment in Verelst's counter-guard, in Fort William, for the accommodation of a state prisoner of rank, and make such alterations and repairs as may be found necessary for the security of the prisoner, and the accommodation of the guard, to be placed over him.

You will be pleased to report to me the earliest time by which the apartments can be in a state to receive the prisoner in question.

I have, &c.

From the Secretary to Government, to J. RICHARDSON, ESQ. Agent to the G. G. Bundelcund.

SIR,

I have the honour to inform you, that Lutchmun Dowah, late Killedar of Adjeegurh, yesterday arrived at the Presidency. He announced his arrival in a note to the Persian Secretary, and declared the purpose of his journey to be, as you conjectured, to represent the circumstances of his case to Government. Measures were immediately adopted for his apprehension, and he has accordingly been secured, and lodged in a commodious habitation.

2. Lutchmun Dowah does not appear to have been yet informed of the melancholy fate of his family.

I have, &c.

(No 2.)

Translation of the Proceedings of the Agent to the Governor General, 5th July, 1809.

Gunessah, a barber, appeared, and being interrogated, stated :—" I was a servant of Adjudea Persaud's. Since the time that Adjudea Persaud was killed at Ragowly, I have remained in the service of Lutchmun Sing. About the middle of the night, Lutchmun Sing left this place, and said to me, ' I am going to the village Assnee Gopalpore, to borrow money.' Accordingly myself, Heeree Naggel of the shepherd cast, and Nindlal and Bowannce, Bramins, accompanied him. At day-break we reached the village of Beroker, about three coss from hence. Lutchmun Sing sat down in a grove, without the village, and sent Heeree and Nindlal into the village to purchase a tattoo. The said men purchased and brought back a chesnut mare for 15 Rupees. Having mounted the above mare, Lutchmun Sing rode away from thence, and arrived in the evening at the village of Joherpoor, and put up at the door of a Zemindar. The said Zemindar enquired his name; but he told him a

name different from his own. In the morning he set out from thence, and at about the distance of three coss from Futtehpoor he sat down in a village, the name of which I do not recollect, when a Sepoy returning from the eastward, saluted him by his name, Lutchmun Sing, and enquired, 'Where are you going?' Lutchmun Sing denied himself. Again the Sepoy said, 'I know you well.' After this conversation, the Sepoy went on his way. And Lutchmun Sing also proceeded onwards, and struck out of the common highway, and took the road to Assenee Gopalpoor. He remained that night on the road, and in the morning, having arrived at the Ghaut of the above place, he embarked on a boat, and gave the mare to a Bramin.

"In four days he arrived at Allabad, and remained one day there, on board the boat, and then proceeded. In two days he arrived at Bind Bas-enee, near Mirzapoor, and went into the temple, and worshipped Dabce. The Pundits recognized Lutchmun Sing, and saluted him aloud by name, and with their usual prayers at the time. Having consulted amongst ourselves, we hired another boat for 11 Rupees, and proceeded from thence, lest by remaining longer, we should be discovered and seized. Accordingly after two days, having reached Benares, and having come ashore near the place where Amrut Roa the Marattah is, we discharged the boat, which was hired to this place only; and having come to the Ghaut of *Munkinkah*, we lodged in the house of an Aheer. Heeree Naggel came back from the Ghaut, and said, 'I have seen Amrow Sing, a Chuprassey of Bandah, at the Ghaut; he is probably come in search of us; it is not advisable to remain longer here, we shall be apprehended.' Accordingly at that moment Lutchmun Sing went off from thence, saying: 'Having got two or three coss clear of the city of Benares, I will hire a boat for Calcutta, at whatever price it is to be procured at.' I came to the bazar on some business; and on account of my being unwell, I was unable to accompany Lutchmun Sing. It is about 27 days since I parted with Lutchmun Sing, and from that day I know not where he is gone. He had with him 650 Rupees when he went off, of which whilst I remained with him, about 50 or 60 were expended at the place Bind Bassenee. Heeree said to Lutchmun Sing, 'Give me some Rupees for my expenses, otherwise I will tell all men, that Lutchmun Sing has fled from Banda, and you will be seized.' Upon this Lutchmun Sing gave him 20 Rupees: the remainder were expended in other matters."

A true translation,

J. RICHARDSON, *A. G. G.*

From the Secretary to Government, to J. RICHARDSON, Esq. Agent to the Governor General, Bundelcund.

July 31, 1809.

SIR,

I am directed to inform you, that Lutchmun Dowah has effected his escape from the confinement in which he was placed at the Presidency;

and notice of the event has been transmitted to the Magistrates through whose districts he may have occasion to pass, directing them to use their utmost vigilance for his apprehension, as prescribed in my instructions of the 26th ultimo.

I have, &c.

On the 3d of August 1809, Mr. Blacquiere addressed Mr. Edmonstone, (then Chief Secretary to Government,) as follows.

When Lutchmun Sing Dowah fled on the 30th July from my custody, he left a long address to the Right Honourable the Governor General upon his bed. I have translated 't, and now enclose the original, with my translation, for your information. It would be a grand object, if the case of Lutchmun Sing could be brought under his Lordship's consideration before his departure.

I remain, &c.

Translation of the Petition of Lutchmun Sing Dowah, of Adjeegurh, in Bundelcund, on the 30th July, 1809.

Whoever reads my petition, or hears it read, and does not immediately communicate it to the Governor General, and explain it fully, but alters the sense, and does not represent it as it really is; whoever delays, or practises artifice or fraud in so doing, may the most serious imprecation light upon him, and may he be considered a great sinner, and discarded by Seetaramjee.

Whoever communicates it immediately in its true light, either in Persian or in English, in such manner as it be understood, will receive a future reward, and be highly praiseworthy.

Dowah Lutchmun Sing, Rajah of Adjeegurh, represents to the Right Honourable the Governor General, with millions of salutations.

I travelled six hundred coss on foot, with only two attendants, and came to your Lordship, under the expectation that after such an arduous undertaking, and having forsaken my elephants, horses, army, brothers, nephews, family, and children, looking to your foot as an asylum, on hearing of my arrival, your Lordship would have granted me an interview, and sent me away well satisfied; but such misconception of my case took place, that immediately on announcing my arrival, I was taken into custody.

I wrote a statement of my case, which I am not aware whether your Lordship has seen or not, and having been a long time in custody, I made off.

I resorted to your Lordship, looking up to you as my deity; and my treatment has been such as has been never met with, or heard of, or practised by any one, in any one of the four ages, or mentioned any where in either the Vedas or Puranas, or even practised by those lost to all sense of religious or moral duty, or in times when the world was uncivilized.

" Your Lordship will be pleased to refer to your own laws, and see whether the destruction of one who implores protection, is any where ordained.

I will remain four days within ten coss of Calcutta, either in Calcutta or on the opposite side of the river, as most convenient, in a state of concealment. Now if your Lordship be endowed with justice, magnanimity, and the divine attributes, be pleased to consider that all is perishable, except the good or bad reputation a person acquires, which remains after him.

Having well considered this, if your Lordship should be disposed to see me, and look upon my case with compassion, you will be pleased to direct that two letters be written in the Persian language, promising me protection, under your Lordship's own signature, and large seal, which I have seen, and am acquainted with.

I pray that the letters may express, that your Lordship will grant me an interview, immediately on my coming, and declare to me at such interview (one of two things,) that you will either blow me from a cannon, or that you will pay favourable attention to my representations, with an assurance that your Lordship will neither confine me, nor neglect my case.

Your Lordship will be pleased to order two letters to this effect to be delivered to two of your Lordship's own Sontaburdars, to be carried by them from house to house, on both sides of the river, and make the same public; and that they are come in quest of Lutchinun Sing Dowah, the Rajah of Adjeegurh, with promise of protection; and when such letter reach my hands, and I read it, and find your Lordship's own signature to it, and that it does not deviate from the form I have requested, I will instantly appear, as sure as that I am the offspring of a Cshatriya.

I also swear, and your Lordship will rest assured, that I am not afraid of the cannon. If I be a Cshatriya, fear of death does not exist in the minutest pore of my frame.

Nothing but death, or your Lordship's favourable determination, can afford me relief: your Lordship may rest assured of this.

If I do not receive a letter in four or five days, I will become a wanderer over the face of the earth. Your Lordship will rest formally assured of this, and act as your justice and liberality dictates.

If I become a beggar, God will make me a prince in my next birth.

To N. B. EDMONSTONE, ESQ. *Chief Secretary to Government,*

FORT WILLIAM.

SIR,

I have received with great surprise your letter of the 3d ultimo, informing me that Lutchinun Dowah had effected his escape from his confinement at the Presidency.

2. Although the circumstance of Lutchinun Dowah's flight is to be regretted, from the possibility of this evil minded person (being at

liberty) finding associates of a similar disposition, and consequently giving trouble to Government by the confederacy, or at any rate of exciting some anxiety; yet I do not myself think that in fact this man will ever be able to give serious molestation to the tranquillity of this province.

3. I am quite in the dark as to the immediate circumstances or apprehension which impelled this infatuated man to this last, still more unaccountable step, than any heretofore taken by him; and can form but uncertain conjectures on the probability of his future proceeding. If he was informed of the fate of his family before his escape from the Presidency, I should not be surprized if he destroys himself, or retires to some remote corner, and spends his life as a recluse, in expiation of his crimes. If he was ignorant of their fate at the time, I am of opinion he will endeavour to mix with and conceal himself amongst the pilgrims to Juggernaut, and by that means endeavour to pass through Cuttack into the Rajah of Berar's country, to the southward, and by this route enter into the hills, on the borders of Bundelcund, and endeavour to subsist by plunder, or perhaps enter the service of some of the bordering independent chiefs.

4. I have taken all the measures in my power to carry into effect in this Zillah, and on the banks of the Jumna, the spirit of the circular instructions sent to the several Magistrates in your circular letter of the 26th of June last, and again ordered to be carried into execution on the 31st ultimo; and I have thought it prudent to send a copy of those instructions, together with a copy of your communication of the 31st ultimo, to the Resident at Lucknow, with a request that he would take the necessary steps to ascertain that the measures directed by Government may be carried into execution, in the Vizier's dominions, as it is possible he may enter them for shelter.

I have, &c.

(Signed) J RICHARDSON, A. G. G.

ART. II.

ON THE

ORGANIZATION OF THE CORPS OF ARTILLERY.

To the Editor of the British Indian Military Repository.

SIR,

In the year 1818, a small work made its appearance from the London press, entitled “Remarks on the Organization of the Corps of Artillery in the British Service,” which has been attributed to the pen of that active and highly intelligent officer, Colonel Sir Augustus Frazer, K. C. B. of the Royal Regiment of Artillery.

As it is in the hands of but few officers in this country, a summary notice of some passages in it may not prove unacceptable to some of your numerous readers.

Speaking on the subject of the education and employment of the Royal Artillery officers, the author offers some observations which appear not inapplicable to the cadets of artillery at our Indian Presidencies.

On joining the corps as officers, the young men are required to remain for some time, generally for a year or more, at the head quarters of the regiment, at Woolwich, for the purpose, as it is said, of acquiring some knowledge of their profession, before they join the companies to which they are posted. But as there is no officer, whose duty it is to instruct these young men, or to be in any way responsible for their improvement, and as there are generally at Woolwich a great many of these young officers, between whom and the senior officers of the regiment much intercourse, from disparity of age, is not likely to exist, they find themselves obliged to associate almost exclusively with each other; in many cases gradually lose much of their earnest desire to obtain professional knowledge; and at last join their companies, having already forgotten part of what they may have learned at the academy, without having acquired any thing in return but the bare habit of mounting guard, and hearing the rolls called in the barracks.

Here, then, is the first error in the employment of officers of artillery. So much of the success of life depends on the good employment of the first part of it, that it were well either to send the young offi-

cers at once to their companies, where the captains would, for their own sakes, attend to their instruction; or, if they are kept at head quarters, to place them under the care of officers responsible for their advancement, and interested in their instruction.

The retention of artillery cadets at Dum Dum, St. Thomas' Mount, and Matoongha, in the vicinity of our chief settlements, seems even more questionable than that of the young artillery officers at Woolwich.

• If immediately after their arrival in India, artillery cadets were, like those of the cavalry and infantry, removed to the interior, away from the expense and dissipation of Calcutta, Madras, and Bombay, and not brought within their vortex, till after obtaining some experience of the climate, the country, and the service, much individual benefit would accrue.

While the cadets for the other branches of the service, even during their short residence at our chief settlements, remain under the immediate charge of a superintending officer; the cadets for the artillery, (who from being stationed in the vicinity of these settlements for a much longer period, more urgently require superintendence,) are left without any officer responsible for their instruction or advancement.

It appears not only desirable, Mr. Editor, that this state of things should be remedied, by one of the staff officers at our artillery head quarters being especially appointed to the charge of our cadets, but that these young gentlemen, after joining their companies or battalion as officers, should remain permanently attached to them till promoted, as appears to be the practice in the royal corps.

• In Bengal, the pages of our General Orders are constantly filled with artillery removals and postings; and while, by the new constitution of regiments, officers both of infantry and cavalry are now sure to become acquainted with their men, the officers of our corps of artillery remain, as heretofore, constantly shifted from one corps of the regiment to another, belonging to the native or Golundauze battalion to-day, and to a European company to-morrow; posted now to a portion of the corps at Dum Dum, and the next removed to one at Arracan or Cuttack, Loodianah or Neemuch; one day to a troop of horse artillery, another day to a company of foot, or even to one of gun lascars. Our artillery officers can thus seldom either know their men, or be known by them, and remain

not only subject to a serious expense (by the frequent movements necessarily occasioned by these constant removals,) but to the evil of retrenchments from the Audit office, when removed from all possibility of personal reference to the books and papers requisite to enable satisfactory replies to be afforded. All this originates, in our battalions of artillery not being, like those of infantry, regimented, or separately divided and made distinct from each other.

If our officers of artillery were only, like those of our infantry, once posted to battalions according to seniority, and no officer belonging to one battalion were subsequently removed to another, except on promotion, our artillery would no longer labour under the disadvantages now unexperienced by officers of the line.

I may indeed even hazard the remark, that the permanent separation of the officers of the Native troops and companies, from those of the European troops and companies, and that of those of the brigades of Horse from the battalions of Foot artillery, so that the promotion of officers should go by battalions and brigades, and not in the whole corps, seems suggested by the very same reasons that induced the separation of our Cavalry from our Infantry, and caused the former to be congregated into 10, and the latter into 69, instead of into only one monstrous and unwieldy regiment; and though likely to be productive of very unequal promotion (by the inequality of casualties in each battalion or brigade,) would not prove the less beneficial to the state; while it would place the individuals in the artillery, on a footing precisely similar (as to chances of promotion) with those in the line; whereas at present, though the proportion of prizes to blanks are similar, the chance of prize in the artillery and engineers, is greatly modified by being distributed according to *army*, and not to *battalion*, or what may (with reference to the line) be termed *regimental* rank.

In the chapters on horse and field artillery, the author makes the following observations, many of which seem applicable in Bengal more particularly to our field batteries, which consist of three different calibres.

In the earlier formation of the corps, the lightest guns were supposed to be best adapted to the service of horse artillery; and accord-

ingly, *three pounders, light six pounders, and light five and a half inch howitzers*, were at first alone used. To these, about 1798, were added *light twelve pounders*, and troops were equipped with ordnance of *three* different calibres.

The inconvenience of this arrangement, and its tendency towards confusion of ammunition and want of unity of movement, was soon felt; *and the light twelve pounders, having been found inefficient pieces of ordnance, were laid aside; as were the light five and a half inch howitzers, after repeated experience in the Peninsula had confirmed that opinion of their inutility, which had been formed by the reflecting part of the corps at home.*

To these *light* howitzers, after some time, succeeded a *heavy* five and a half inch howitzer.

In 1813, an attempt was made in the Peninsula, to show that *nine pounders* were applicable to the service of horse artillery; but the ordnance of a troop equipped with nine pounders, was broken up and distributed among the field batteries of artillery, before the campaign was opened, or any trial could be made; and three troops, of the five on the Peninsular service, were returned to the complication of three natures of ordnance, from which the corps had emerged in 1800.

But, since experience has not proved that any advantage arises from multiplying the calibres, or the natures of ordnance of the same troop, it is to be hoped, that the experiment will not be repeated. If it should, the same inconveniences (and upon service they are not trifling,) will assuredly and uniformly attend it.

It may be observed, that the remark, in its fullest force, is applicable to field artillery in general, the arrangement of the ordnance of which cannot be too simple, or too free from the possibility of confusion or mistake.

As opinions still vary as to the ordnance best adapted to horse artillery, it may be well to point out the reasons why *every* nature of field ordnance may be fairly said to be equally applicable to the service of the horse artillery as to that of field artillery in general. It is the more necessary that this point should be set at rest, since upon it depends the future organization of the arm, how far its use may be admitted to extend, and where its application may cease.

It is necessary, before a correct judgment can be formed on this subject, to consider the original intention of horse artillery.

It appears to be, that field artillery, when well served in action, having been found very destructive, and essentially useful, there required only that it should attain certainty and celerity of movement to render it an arm of high importance. Two ways of doing this seem to have presented themselves: one, by putting the artillerymen on carriages; the other, by mounting them on horseback: and, notwithstanding the obvious advantage of the economy of the former mode, the utility of

the latter has made it almost general among the military powers of Europe.

Here, then, is the origin of horse artillery; and according to one or other of the above modes of organization, or to some modification of both, is the arm every where appointed.

But in whatever way the men may be carried, in order that, after a rapid movement, they may, on getting in action, begin, unfatigued, the laborious duty of working the guns, it is clear, that the effect of the fire is the same. Once unlimbered, it is the same how, or by what means, the guns were brought, or the men carried to the assigned point; nor can there be any difference whether the men, who work the guns, belong to one branch of the artillery or to another.

The only real difference will arise from skill, bravery, and previous instruction.

It was long thought, that the use of horse artillery was confined to the object of harassing the flanks of an enemy, but that it could not be placed in position; and that it was, by frequent and almost continual change of situation, to avoid coming under heavy and destructive fire. On this supposition, and on the strange and mistaken idea, that in war any arm is always at liberty to choose where it shall go, and when its service shall cease, it was natural that the pieces of the lightest calibre, and of the greatest capabilities of movement, should be preferred; and that their use, as engines of destruction, should be but a minor consideration.

Experience, however, has proved, that what is called harassing an enemy is, in many cases, rather harassing oneself; and that, although great advantages may be gained by the occasional fire of artillery on the flanks of an enemy, the real application of the arm consists in bringing up considerable masses of guns, and pouring their fire, as much as possible, on one point.

In this view of the subject, it is of the greatest consequence, that guns, brought by whatever means they may to the particular point where they are required, should be powerful and efficient guns. But whoever will reflect on the service of the late war will be sensible, that the guns, *on whose certain arrival at indicated points the greatest dependence could be placed, were those of the horse artillery*; whose powers of movement, though short of what they readily might be, were yet much superior to those of the rest of the field artillery. Now, as this must ever be the case to a certain degree, and as the guns of the horse artillery will always, on this very account, be more available on emergencies than any others; it seems peculiarly necessary, that though some troops of horse artillery, in reference to the duties of light cavalry, may be armed with light ordnance, the majority of this valuable arm should be equipped *with powerful and efficient calibres*, such as may be applied in masses, and may do great and unequivocal execution.

If, then, the real use of horse artillery be to move guns with rapidity, and certainty to the points where they are required, and if the men be solely on these accounts placed on horseback, there can be no doubt that *all guns, of every calibre whatever*, which the modern habits of war may bring into the field, are applicable to horse artillery; the men of which service, though mounted for the mere sake of expeditious movement, are neither more nor less than other artillerymen, the moment the guns are brought into action.

It is essential too, in another point of view, that the guns of the horse artillery should be good and efficient pieces. It is not without very considerable expense that guns of any kind, or upon any establishment whatever, are brought into the field; but the guns and equipments of the horse artillery have, besides the expenses common to other field guns, the additional ones of the horses and appointments for the mounted men. This difference of expense is frequently mentioned in disparagement of the horse artillery, by those who look no farther than bare expense. But, if the services, or at least possible services, of this powerful arm be fairly placed in the balance, they will far outweigh these ideal objections; and the value and merits of a corps, which combines zeal, gallantry, and extraordinary energy, must be acknowledged.

It may here be fairly observed, in support of the arguments in favour of arming the horse artillery with heavy guns, that, adverting to the nature of the service on which they were about to be employed, six troops of the ten which were engaged at the battle of Waterloo exchanged immediately before it their light guns, for nine pounders; so that, including the howitzer with the remaining troops, there were then in the field with the horse artillery forty pieces of heavy calibre: and whoever will recollect how, almost exclusively, for some hours, that battle was one of artillery, and how much necessarily depended upon the efficiency of that arm, must admit, that the exchange was opportune and judicious*.

It may not perhaps be too much to say, that had the lighter pieces been suffered to remain, it might have had a considerable effect on the fortune of the day; and the state and relative utility of such of the troops as retained their lighter guns, and were in exposed situations, very strongly corroborates this idea.

At the battle of Waterloo, too, was seen, for the first time, a troop armed exclusively with howitzers; and the striking effect of their fire near the Chateau Hougomont fully justified their application, and es-

* The expenditure of ammunition by the British artillery appears to have been, at the affair of Quatre Bras, nine hundred and seventy-four rounds; at the battle of Waterloo, nine thousand four hundred and sixty-seven. The expenditure of small arm ammunition, on both those occasions, appears to have been nine hundred and eighty-seven thousand ball cartridges only.

tablished the value, with these pieces of ammunition, of which the utility, with field pieces in general, remains at least very doubtful.

But, without entering here into the question of the relative value of any nature of ordnance, or species of ammunition, it may suffice generally to observe, that the execution of the British artillery is freely admitted in every account of the battle of Waterloo published by the enemy; and that it was under the protecting fire of the artillery, that the infantry, early in the day, acquired that firmness, which rendered unavailing the repeated attacks of the masses of the enemy's cavalry.

It remains only, that the horse artillery should receive a very few improvements, and those such as are almost obvious, to make it the first service of the kind of the world.

The first of these is, that the gun carriages and ammunition carriages should be lightened as much as is consistent with their necessary strength, both in reference to the shock of firing, and jolting of travelling.

The second, that in all troops equipped with heavy ordnance, that is, with guns of a higher calibre than six pounders, *all the men for working the guns should be mounted on horseback.*

The third, that to the horse artillery should be attached non-commissioned officers of drivers, as is done to all batteries of field guns; and that promotion should be open to the horse artillery drivers equally with those of the rest of the service.

With respect to lightening the guns and carriages, it is not meant that the horse artillery guns and carriages should in any way differ from those of the rest of the service. But it were well worth the consideration of a select committee of artillery officers, specially convened for the purpose, to determine whether, without losing sight of necessary strength, the gun carriages and artillery carriages of the whole service might not both be lightened, and be built more economically; and whether any, and what part of their equipment may not altogether be dispensed with.

With respect to placing all the horse artillerymen on horseback, with troops equipped with guns of a higher calibre than six pounders; as this measure would evidently be attended by an increase of twelve horses per troop, the advantages arising from it should be very clear to authorise its adoption.

The chief advantage consists in lightening the load of the gun carriages, by removing from them not only the men but their appointments, all that the gunners have permission to place upon the carriages, and all that, without permission, will in despite of every vigilance be occasionally placed on them, converting them from machines of war into baggage carriages. To this is to be added the diminution of the chance of those accidents, which so frequently occur by the gunners being shaken off the limbers; the fear of which cramps the movement of the arm in the rough varieties of ground continually met with on service.

All horse artillery officers of experience will recollect many instances of accident, and more of narrow escape, from men having been shaken off the limbers.

Were not the additional horses and their consequent expense an object of some importance, there is no doubt that the efficiency of all horse artillery guns, even of the lightest calibres, would be increased by putting all the men on horseback. But some officers having imagined that the guns were both unlimbered and limbered up again an instant sooner by the assistance of the limber gunners than they would be without these men, have wished to retain them for this supposed advantage; which, if it exist at all in the trifling advance of a few yards on perfectly level and firm ground, decidedly does not exist in a movement to any distance over the ground commonly met with on service; and does not in any instance apply to the management of any guns but those of the lightest calibre.

The real question is, which arrangement is most likely to secure the unequivocal efficiency of the arm. Experience of many years has forced upon the author the conviction, that taking the men off the limbers and placing them on horseback would be a decided improvement.

It may be thought that too much stress is laid on the advantage of increasing the power of movement, or, in other words, the physical strength which moves the guns: but whoever will recollect the many cases in which guns were either not brought at all to the points where they were wanted, or arrived just after the moment of opportunity had escaped, will be sensible, that neither the guns of the horse artillery, nor those of the field artillery in general, have yet attained the freedom of movement which is so highly desirable.

All guns are necessarily expensive and complicated machines; but if, either from the want of the powers of movement to bring them to the desired point, or from want of skill, or from any other defect in their management when they shall have reached it, they fail in doing execution, their expense becomes a dead loss. Whoever will estimate the probable value of a gun and its attendant equipment, by the time it is brought into the field, will be convinced, that it is bad economy to stop short of any thing which will ensure efficiency.

Something may be made of bad cavalry, or indifferent infantry; *but bad artillery is good for nothing*. Artillery is a source of constant and serious expense; and, unless a powerful arm of assistance, is a clog and embarrassment to the movements of an army.

The strength of the arm, therefore, is not to be estimated by the number of the guns, but by their efficiency of movement, and by the skill of the men who work them.

With respect to attaching non-commissioned officers of drivers to troops of horse artillery, and permitting these horse artillery drivers to be promoted, the question will be considered in reviewing the present, and wished for arrangements of the driver's corps.

It remains to make a few observations on the application of horse artillery on service.

Both in the Peninsula and on the later service in France, the troops of horse artillery have been generally attached to brigades of cavalry. It may be presumed that this arrangement has been made from a desire, that with every body of cavalry there should be a corresponding force of horse artillery. But it may be questioned whether this mode of distributing the horse artillery be the best, either for the arm itself or for the cavalry to which it is attached. It has in truth, some of the inconveniences, universally acknowledged, of the system of battalion guns; namely, that, in constantly accompanying brigades of cavalry, the guns are frequently thrown into situations, which, however proper for the movements and application of cavalry, are entirely unfit for those of artillery; which in many cases becomes not only useless, but an incumbrance; and so far from covering the cavalry, in fact prevents its movements.

It is very natural, that the cavalry general of brigade should wish to have an addition of a troop of horse artillery to the cavalry entrusted to his command; and it is equally so, that the captain of horse artillery should wish to be placed under the immediate auspices of a general officer to whom he may look up for the protection of his troop, and for the recommendation which may lead to his own honour and advantage.

But if the benefit of the service be alone consulted, it will probably be best attended to *by keeping the horse artillery in a body attached to the whole cavalry*, when the cavalry does not exceed a division; or, where there may be several divisions of cavalry, by attaching a body of horse artillery to each.

By this arrangement, the horse artillery will be left under the command of those officers, who may be reasonably presumed most competent to understand its details, and to lead it with judgment.

The officers alluded to are the field officers of horse artillery; who, by the existing separation and distribution of the troops which they are said to command, have in fact scarcely any command at all; and whose zeal and talents, whatever they may be, are altogether unavailing to the public service.

But were the horse artillery kept in distinct bodies, those officers, who would then have a clear and decided line of duty, would be obviously responsible to the cavalry generals of division for the troops of horse artillery under their command; and it may fairly be presumed, that the guns in the day of action would be found more efficient if kept in masses than when distributed as at present.

This habitual union and assemblage of troops is the mere application to one branch of the artillery service of a principle common to all; nor does it in any way prevent the occasional separation and distribution which any particular service may require for a time, while it leaves generally the whole arm disposable, according to existing cir-

cumstances ; and in a state of readiness to be applied by the very officers whose particular line of duty it is to understand its management.

If then, the habitual separation of the troops of horse artillery appears to be attended with some inconveniencies on the one hand, and with no exclusive advantages on the other, it is to be hoped that it will not always continue ; but that the service will receive from the field officers of horse artillery the return which it has a right to expect, and which these officers, in common with the other field officers of artillery, are no doubt anxious to be permitted to make.

FIELD ARTILLERY.

It may not be necessary, in considering the field artillery in the British service, to go farther back than the beginning of the revolutionary war, when a proportion of field artillery accompanied the forces sent to the Continent.

At that time the gun carriages and ammunition carriages were of very faulty construction ; the drivers were either hired men, or men borrowed from the infantry, as indeed were half the men who worked the guns attached to the infantry. The carriages were of single draught, and the drivers were in consequence on foot, having generally three horses to each driver. In the ammunition waggons, which like the guns were of single draught, the ammunition was packed in a confused manner in loose deal boxes. These waggons were drawn by three horses driven by one man on foot ; at this very time, however, the British artillery had the mortification of seeing the English waggons, which were furnished to the Hanoverian artillery, drawn by four horses, and driven by two drivers mounted.

During the campaign of 1793, many necessary improvements were suggested and reported to the department at home ; but their adoption having been refused, the artillery took the field in 1794, little otherwise benefited by the preceding campaign than by the knowledge of its own defects.

At the period in question it was usual to attach to each battalion of infantry two guns, which were called the battalion guns. The rest of the field artillery remained parked, generally in rear of the centre of the army.

Independent of the disappointments inseparable from the bad equipment of the guns, it may be supposed, from this arrangement of them, that on emergency time was always lost in sending to the park of artillery for the guns required, to which at the moment men and horses had in many cases to be distributed and appointed ; and that the field pieces attached to the infantry, from the very obligation of following the battalions, were frequently of great incumbrance, and rarely of any use.

Although these truths were forced on the conviction of those who thought at all on the subject, and although the remedies to these defects were simple and obvious, yet we find, even in the home encamp-

ment near Swinley, in the year 1800, the system not abandoned; though in the preceding six years the drivers had been formed into a military corps, and had been mounted instead of being on foot; and the gun and other carriages, with a few exceptions to which prejudice still clung, had received the improvement of being made susceptible of double as well as single draught.

By this time, however, the superior efficiency of the horse artillery, from having its officers, men, and horses regularly appointed, and constantly fixed to the same guns, became most apparent; and the reflecting part of the corps could not but hope that a system so obvious to reason, and so demonstrably proved by practice, would be generally adopted in the field artillery.

Yet nothing was done; no brigades or organised bodies of field artillery were formed, till, on the renewal of the war after the peace of Amiens, a very considerable improvement was made by the introduction of cars, or two-wheeled carriages, for the ammunition of field guns; on which cars, and on the limbers of the guns, it was proposed to carry, upon occasion, all the men required to work the guns.

The object was a most desirable one, and in endeavouring to enable the field artillery to travel more quickly there was a clear admission that the guns had not yet attained efficiency of movement. Considerable improvements were also made in the essential point of arranging the ammunition, of the confused mode of packing which all officers had long complained; but there being in this, as in other cases, no person to whom those complaints could be addressed, no alteration had taken place.

Several brigades of guns with cars attached were fitted out, and the system of cars had a fair trial. The troops of horse artillery also exchanged for cars their ammunition waggons, which were then so heavy, that one box, of three which the body of the waggon contained, was always ordered to be left empty.

At the same time that great attention was paid to the construction of the cars, the field carriages of the guns received several improvements, as did many other points connected with the field artillery, which about this time made great advances towards being an efficient and powerful arm.

After the careful experience of some years, the cars, or two-wheeled carriages, were not found so eligible for the artillery service as had been anticipated: they were discovered to be very liable to be overturned when moving with rapidity, over even trifling inequalities of ground; the gunners were more easily shaken off them than from four wheeled carriages; and they were found to distress the horses, especially the shaft horses, which, besides the weight of the carriage, had occasionally superadded that of six men with their knapsacks, from which weight it had not been found so practicable to relieve the horses as had been expected by altering the balance of the weight. There

was also the disadvantage, attending all two-wheeled carriages, of having the whole weight at the same time in a slough or ditch, which it became necessary to pass.

About 1807, therefore, the cars were replaced by ammunition waggon, or four-wheeled carriages, made on an improved construction, and considerably lighter than before.

But though the cars failed in affording all the advantages expected from them, yet their introduction into the service was of great use; since their admission provoked *discussion and trial*, and since the field artillery was for the first time fairly committed in England to the hands of the officers of artillery. Almost all the late improvements may be dated from this time, and be traced to the spring and energy then called forth.

The idea of carrying the men on the limbers of the guns, and on the ammunition carriages, was not altogether new, having been partially practised in 1794; and the present ammunition carriages are merely improvements on those invented at that time. But it was not till the temporary adoption of the cars that this system became general, though admitted by all to be excellent.

It is, however, worthy of observation, that few, if any instances of mounting the men on the guns and carriages, can be found to have occurred on service during the whole course of the late war; which is a plain proof that the guns and carriages have at least not been overhauled, and that some obstacle still presents itself to the attainment of that desirable end.

But the system of establishing brigades of artillery in England was not of long continuance. At Woolwich, the head quarters of the corps, and the source, or supposed source of instruction, officers were occasionally directed by the orders of the garrison to take out field guns to exercise; receiving the men on parade from the adjutant on duty, the drivers and horses from the Driver Corps, and the guns from a park formed for the purpose. If in seasons of more than usual diligence the field exercise was repeated in the course of the same day, the artillerymen, drivers, and horses were generally different in the afternoon from those present in the morning.

It is needless to say that this strange mode of attempting to teach, what is only attainable by patient, quiet, and repeated instruction under the same person, could lead to nothing but confusion.

At out quarters, indeed, where the field officers were responsible for the discipline of the corps, brigades were formed of *six* pieces each; the system of battalion guns having been every where abandoned: and the officers and men were generally attached to the same guns, for which the captain gave a receipt to the commissary of artillery, and became responsible for them as well as for their ammunition and stores.

But the drivers and horses still remained separate and distinct, under the driver officers, the senior of whom merely received orders from the

commanding artillery officers for the temporary application of the number of horses required for the exercise of the day.

Such, then, having been the practice at home, let us view the application of the system to the service of the field artillery abroad.

On its being intended to send out an expedition from England, the companies of artillery, which are intended to accompany it, receive orders to hold themselves in readiness for foreign service. These companies are generally, indeed it may be said always, at different stations; usually belong to different battalions of artillery; and, as may be supposed, are frequently in very different states of readiness and efficiency.

The field officers, who are selected for the service, also receive an order to hold themselves in readiness; and the senior, that is to say the field officer who is to command the detachment, farther receives, in many cases, instructions from the Board of Ordnance—not relating to military points, but principally to cautions on the subject of expenditure of the public money.

A commissary of artillery is also ordered, and is charged with the responsibility of the ordnance, ammunition, and stores, which are to be sent on the service; but with respect to their number or selection, the officer intended to command the artillery is rarely if ever consulted, and of which the other officers, unless they happen to be at the point of embarkation of the ordnance, have no knowledge whatever.

The drivers and horses required for the service are also assembled from various points, and are embarked under the direction of the senior officer of the Driver Corps proposed to accompany the expedition.

The drivers and horses are not told off, or distributed to any number of guns or carriages, but are embarked in one disposable body.

In this situation it becomes the duty of the senior artillery officer, after he shall have received the directions of the general officer commanding the expedition, to arrange the arm committed to his charge; to fix the number of brigades of artillery, and of how many field pieces, and of what calibre of those embarked they shall consist; to determine what companies shall be applied to the brigades, and what shall remain in reserve; how the field officers shall be distributed; the drivers and horses shall be told off; how the reserves of ammunition, both for artillery and small arms, shall be appointed; and generally, how an organized body shall be formed out of the component parts which successively arrive from different stations at the point of debarkation.

Let it be supposed that these component parts are all, separately, good; that the officers and men are well equipped, and well instructed; the drivers in all respects well appointed and drilled; and the horses strong, and well trained. Yet, even on this supposition, these parts must be unknown to each other; there must be a want of unity of system; the officers must receive their ordnance and ammunition on the faith of the commissary, and almost without examination; the

harness cannot be expected to fit ; new regulations as to interior arrangements must be made at the moment, and under all the disadvantages of hurry, and of every individual's being placed in a new situation. In short, under the most favourable circumstances of previous instruction and of local facility, all that can be effected must be, that brigades of artillery are put together, and hastily formed ; that they should at once be perfect, or any thing like perfect, is obviously not to be expected.

But if, instead of this, it be supposed, as is known to be the real case, that in companies coming from different points, and from different services, very different degrees of instruction or efficiency exist ; if some have not for years gone through even the bare formality of a drill with field guns of the useless kind to which we have already alluded ; if the drivers be in many cases ill instructed, and in others not at all ; if their accoutrements be entangled in confusion ; if the horses be frequently of an indifferent description, and rarely, as a body, in that state of good condition which a mass unbroken into regular subdivisions seldom attains ; if harness tried for the first time cannot, without many little unavoidable alterations, fit horses of very different shapes : if, in short, all the various parts of which the field artillery is composed be in this unformed state—what can for some time be expected from it, even if it should not be immediately brought in contact with the enemy ; and on what foundation can the superior officers, and especially the officer entrusted with the command of the artillery, build a reasonable hope, that he shall acquit himself with credit in the management of an arm which he has been obliged to confide to men, of whose competence or relative ability he knows nothing ?

Now, if it were inseparable from the organization of artillery to delay till the very moment of service to make those preparations for efficiency, which in the simpler arms of cavalry and infantry are justly considered indispensable, it were idle to point out the difficulties otherwise than as a reason why a commanding officer should be exempted from reproach, if the arm be not, all at once, efficient. But if every facility present itself towards attaining, by previous arrangement and instruction, complete and perfect organization ; if the arm of artillery may, on landing on any service, be as well formed, and its immediate efficiency be as certainly calculated upon, as that of either cavalry or infantry ; if, instead of having almost to invent, or at least to enforce, at the moment of service, some code of interior regulations, and of general movement, the execution of which he cannot observe, the commanding officer of artillery had but to call for the practice of what he had previously taught ; if, instead of having to learn the zeal and abilities of the officers over whom he is temporarily placed, he were previously acquainted with the relative capacity of all, and had placed each, as far as circumstances and the rules of the service would admit, in the situation for which he was best adapted ; if, instead of forming a complicat-

ed machine at the moment of wanting it, he had merely to apply one ready formed by himself, can it be doubted, that the effects would be widely different? that the arm would indeed do good service to its country? and that commanding officers of artillery could not, if they deserved it, fail to receive the approbation from their commanders, which is now of such rare attainment.

Let us consider what is the present situation of the officer commanding the artillery of any army.

He is expected to be responsible for all that is understood by the efficiency of the arm. Yet he has had nothing to do with its instruction before it joined the army, when it is subdivided and placed in various ways under the command and superintendence of the general officers of the cavalry and infantry; so that, with the exception of attending to its wants in men, horses, ordnance, and stores, and of endeavouring by correspondence with the department in England, to obtain the necessary supplies, the commanding officer of artillery may be almost said to have little to do with the arm in the field. His opinion, we have seen, is not asked as to the selection of the arm for service, and it is as clearly never required for the distribution of it afterwards. He can seldom be known to his commander but by the wants of the arm, or by the sins of the system. Can it be wondered then, that, rarely coming in contact but on these ungracious occasions, he seldom obtains the consideration which he does not appear to deserve? As to signalizing himself by any happy application of the arm in the field, it is out of the question. He remains an individual, without the power of moving a single gun.

With respect to the field officers of artillery with an army, they are, by the present distribution of the arm, placed in a very singular situation. They are appointed to, and understood to have the command of two brigades of field artillery. But these brigades, being attached to a division of the army, are habitually separated from each other. In consequence, the field officer cannot be with both; his presence with either is displeasing to the officer commanding the brigade, who naturally wishes to receive the credit of acting independently; and the field officer is reduced to the alternative of either doing nothing, or of interfering with the command of a captain, probably very competent to the charge of his own brigade. Even in the ordinary routine of transmitting the daily states and reports of the brigades, the habit of the present day is for the captains of brigades to send them direct to head quarters, without their even passing through the field officer, who is, and who feels that he is, a mere cypher.

Now, if the service were benefited, or the field artillery made more efficient by this virtual supercession of the field officers, there can be no question that these officers should not stand in the way; there can be no doubt, that their interests should yield to the paramount interests of the service. But if, so far from benefiting the service, this super-

cession be obviously one of the very causes of the want of efficiency, and if the instruction of which the corps stands in need ought to spring from these very officers, this ruinous system, which is fatal to any thing like zeal, cannot be too soon done away with.

It requires indeed no argument to prove, that in order to have any organized body there must be a gradation of ranks, and that these can never be inverted without doing real injury.

It is certainly a proper distribution of the field artillery of an army, that the horse artillery should chiefly be attached to the cavalry, and the brigades or batteries be attached to the divisions of infantry; but in order both to have the arm in a good state, and apply it with effect against the enemy, these brigades, instead of being habitually separated, should be systematically kept together; and the field officer in charge should be strictly responsible, not only to the divisional general officer, but to the commandant of artillery, for every thing relating to the brigades under his command. *Nor should the guns ever be separated unless from necessity, or for some temporary reason, after which they should resume their usual order.*

In this way the field officers would do real and good service, and would have a clear and definite line of duty; they would have a real instead of a nominal command, and would become really interested in the efficiency of the brigades entrusted to them.

Any attempt to *divide* brigades of artillery is, as it were, *returning to the system of battalion guns*; and it may be observed generally, that two brigades, or twelve guns, are the *smallest* number of pieces, which, when the nature of the ground will admit of it, should ever be brought to act together.

Now the movement of two or more brigades of guns, with their attendant carriages, to any point where they may be required, is much more likely to be executed in a prompt and regular manner, when directed by a superior officer in the habits of handling them; and the position which they may take up is much more likely to be the one wished for, than when the order is obeyed by the same brigades acting independently. Every officer, who has observed how much previous instruction is necessary before a body of artillery can move with regularity and quickness, will be convinced of the advantages and necessity of accustoming artillery to move in large bodies.

The chapter on a polygon contains suggestions, which with the modifications proper in reference to the native system of fortifications in India, would appear very requisite to be attended to at our Indian Presidencies.

OF A POLYGON.

By a polygon, is understood, that imitation, as it were, of a front of fortification, which permits the erection, and allows of the use, of batteries of all the shapes, and for all the purposes, required in war, and

especially in that part of it connected with sieges. It is the mean, or mode, by which, in most of the military states of Europe, the corps of artillery is instructed in the course of practical gunnery, so essential to the artillerist; and by which he obtains the knowledge of the use and application of artillery; a knowledge evidently indispensable, and which can only be acquired by a regular and systematic course of instruction. Nor can it be supposed, if this knowledge be left to be picked up by accident on service abroad, that officers and men, who for the first time in their lives are called upon to serve batteries at a real siege, can work their guns with the facility, or point them with the correctness, which previous instruction would have afforded.

At the polygon, also, the artillery officers and men acquire a practical knowledge of the construction of batteries of all varieties of shape and use. It is true, that the construction of batteries is usually entrusted, as it ought to be, to the officers of the corps of engineers, to which corps this duty more properly belongs. But there is, and there ever will be, such a connection between the services of the corps of engineers and artillery, that many duties must ever be, as it were, common to both; nor can the officers of one really understand their profession without a competent knowledge of the duties of the other.

It is by no means meant to infringe on the duty of the corps of engineers: to this valuable corps is, at all times and in all services, confided the plan of the attack and defence of fortresses, and of the number and situation of batteries, and the quantity as well as nature of ordnance destined for each.

But it will hardly be disputed, that the use of the batteries should be fully understood by the artillery who are to work them; and that the reasons, which demand the particular situation and shape of each, and the relative advantage to be derived therefrom, should be clearly known to the officers and men of the artillery, to enable them to carry into effect the wishes of the engineer, and to facilitate and expedite the operations of a siege.

If may be sufficient here to remark, that the uses of all batteries, and the several applications of which guns, mortars, and howitzers are capable, with all kinds of ammunition which ingenuity has yet invented, are to be learned, and an idea formed of the relative value of each, by practice at the polygon; connected with which may be ascertained every experiment relative to the projectile ranges of ordnance, and every other experiment to which the adaptation or application of the theory of gunnery may have given birth.

The polygon, therefore, may be made a school of most extensive and highly useful instruction. Nor does it appear to require any great expense; since the polygon itself, as well as the batteries connected with it, may readily be thrown up by the soldiers of the artillery; whilst the guns and carriages cannot receive any injury by use, and the shot and shells fired may be picked up and used again. The real ex-

pense, so far as experiments are concerned, will be confined to the, expenditure of powder, and this may easily be kept within the bounds of just and liberal economy. Much use might indeed be made of the polygon, and many beneficial effects might be derived from it, without using any powder at all; since, without firing a single round, the practical knowledge of the construction of batteries and trenches, and their relative uses, together with the mode of arming them, and the management of ordnance of all natures, would be acquired.

As it would, however, be essentially necessary, *that the batteries as well as polygon were on the broad scale of reality*, it is evident that a considerable space would be required, and this, it may be said, would occasion great expense. But this objection might easily be obviated by prudent arrangement.

The following remarks seem not inapplicable to the organization prevalent in our troops and companies of artillery in Bengal.

It may be assumed as a principle not to be denied, that it is an *error in judgment*, as well as in *economy*, to calculate too nicely the number of men attached to any equipment of ordnance; the management of which can only be effected by the united efforts of many men, the loss of any of whom renders unavailing the exertions of the remainder: so that, unless the original establishment of men be ample and liberal, sickness or the common casualties of the field can never fail to leave the artillery of an army, though nominally consisting of the same number of guns, in a state very different from efficiency.

The difference, in truth, in this respect, between the arms of cavalry or infantry and that of artillery, will be obvious, when it is considered, that, however diminished in number a squadron or battalion may be, they yet remain complete, though less numerous, bodies; whereas, when the accidents of war have reduced the numbers of artillerymen, if they continue attached to the same number of guns, these guns become altogether incomplete.

There are so many minor duties in which artillery soldiers may be usefully employed, that there is no danger of encouraging idleness by a liberal establishment of men with troops and companies.

It is well known to be the rule of the cavalry and infantry services, that each regiment is at stated periods minutely inspected by a general officer; who makes a report, embracing the details of every particular connected with the arms, clothing, discipline, instruction, and regulations of interior economy, of the regiment. These reports are transmitted to the commander in chief, and form perhaps the principal security for the maintenance of the efficiency of these arms.

It may, therefore, appear singular in a corps like the artillery, which, besides the regulations of discipline and interior economy by which it must be guided in common with the cavalry and infantry, has, moreover, a course of instruction peculiar to itself, that no persons have been

appointed to inspect, and to report, whether the officers and men have been carefully trained to the knowledge of gunnery and artillery duties.

It is true, that the troops and brigades of artillery, distributed among an army, are inspected, and that reports are made as to their state, by the cavalry and infantry generals under whose orders they are placed.

Yet it is obvious, that, however these inspections may tend to ensure discipline of men and good condition of horses, they cannot afford any assurance of the knowledge of artillery duties which the corps may possess. Yet that this knowledge is indispensable will hardly be denied ; nor will it be affirmed, that in a corps formed for a particular service, the instruction necessary to understand it should be overlooked.

The inspections, hitherto made by the cavalry and infantry generals, might still be continued, if thought of use ; which, to a certain, though limited degree, they assuredly are ; but, under all circumstances, the commanding officer of artillery, with every army, should be required to inspect and report to the commanding general the actual state of the arm ; and this with a special reference to the knowledge of artillery duties, of which none but artillery officers are competent judges.

Wishing every success to your Repository,

I remain,

Your obedient servant,

3d March, 1826.

AN OLD CAPTAIN.

ART. III.

QUESTIONS AND ANSWERS ON MINES.

To the Editor of the Indian Military Repository.

SIR,

If the publication of the following Questions and Answers on Mines, by Malorti, appears desirable, you may probably be induced to give them a place in your Repository.

I am, sir,

Your obedient servant,

AN ARTILLERYMAN.

1. *What is meant by subterraneous fortification?*

The art of planning and executing military mines.

2. *What does a military mine consist of?*

It consists of gunpowder lodged in a cavity purposely made, which is called the chamber of the mine; so that fire being set to this powder, the explosion may blow up, or otherwise destroy, any object which the mine may be intended to overthrow.

3. *In what direction are the principal effects of the explosion produced?*

Gunpowder having, when exploded, a natural tendency to act with equal force in all directions, the principal effects of the explosion take place in that direction where the action of the powder is the least opposed.

4. *What is the line of least resistance?*

It is the shortest line that can be drawn from the focus of the mine, that is, from the centre of the powder, to the nearest surface where the principal effects of the explosion are produced.

5. *What is the funnel or crater of a mine?*

The excavation formed by the explosion.

6. *What are defensive mines?*

They are the mines used by the garrison of a besieged fortress, in order to retard the progress of the besieger by destroying his works both above and under ground. Defensive mines are also commonly called countermines, although this denomination would be more properly applied to offensive mines.

7. *What is understood by offensive mines?*

This name is given to the mines which the besieger makes in order to counteract those of the garrison, or to open a passage into the works where he intends to penetrate.

8. *What are fougasses?*

They are small mines, the line of least resistance of which is usually from 5 to 8 feet, or thereabouts, according to the particular object that they are to answer. Fougasses sometimes consist of a single loaded shell, which is placed under ground, or of several shells contained in a box which is fitted for that purpose.

9. *Explain the arrangement of the box used for a fougass with shells.*

This box has a partition, so as to form two boxes one over the other: the shells are placed in the upper box, with their fuzes passing through holes made in the bottom of it, and thus communicating with the lower box, where the priming is lodged and the fire conveyed: if it be wished to use a greater charge for the fougass than that which the shells when filled can contain, more powder than the quantity requisite for the priming may be put into the box; and even the whole charge may be placed there, the shells being loaded only with a sufficient quantity of powder to make them burst.

10. *What is a camonflet?*

It is a kind of fougass, which is not intended to produce any external effect, but merely to interrupt the operations of the besieger under ground, by blowing in the sides of his galleries, whilst in a state of progress, and suffocating his miners.

11. *How may the miner repair to any place under ground where he is to establish a mine?*

By means of pits from 3 to 6 feet square, which are called shafts, and sunk to the requisite depth; and of subterraneous passages having the general appellation of galleries, but which, according to their dimensions, take the particular names of great galleries, demi-galleries, great branches, and small branches.

12. *Have not galleries other names, depending on their position and particular use?*

They are called galleries of escarp, galleries of counterscarp, galleries of envelope, longitudinal galleries, and transverse galleries. The longitudinal galleries include the galleries of communication and the listening galleries.

13. *What is a gallery of escarp, and what is its use?*

A gallery of escarp is that which is placed underneath the terreplein of a work, in a direction generally parallel to its faces. Listening galleries are pushed out from this gallery, which allow the garrison to establish mines for the purpose of impeding the passage of the ditch.

and clearing away the rubbish from any breach which the besieger may have made, so as to destroy the ramp which it forms, and thus render the breach less practicable.

14. *What is the gallery of counterscarp, and what purposes does it answer?*

This gallery is constructed under the terreplein of the covert-way, close to the revetment of the counterscarp, and parallel to it; it is made wider at the circular parts of the counterscarp, and loop-holes are pierced through the revetment of those parts, so that the gallery may afford convenient places for posts, and receive a greater quantity of air, with which it supplies the galleries beyond it: the principal communications with those galleries proceed from it.

The gallery of counterscarp has been placed by some engineers under the middle of the covert-way; and others have proposed to establish it under the banquette of that work; but both these positions give rise to material inconveniences, and ought to be rejected.

15. *What is a gallery of envelope?*

It is a gallery placed either underneath the glacis, at a greater or smaller distance from its crest, or beyond that work; those parts of the gallery which intersect the produced capitals of the places of arms, are usually made perpendicular to them for a certain distance to the right and left of the common intersection, whilst the other parts are parallel to the branches of the covert-way, or nearly so.

Engineers at present agree upon the defects and inutility of a gallery of this kind, as the besieger may easily take or destroy it.

16. *What are galleries of communication?*

Those which are particularly intended to serve as communications from one gallery to another.

17. *What are listening galleries, and what do they serve for?*

Listening galleries proceed from a principal gallery, and are produced beyond it more or less, either in a perpendicular or oblique direction; the miners of the garrison listen attentively in these galleries to any noise from the besieger which they may hear above or under ground; so as to keep watch upon his operations, and dispose such mines as circumstances may require. Branches may also be pushed out from the listening galleries, in order to establish mines at their extremities.

Experience has shewn, that a miner may be heard when at work under ground, from a distance of 90 feet, and even 120 feet, when he strikes wood.

18. *What are transverse galleries, and their purposes?*

They connect those which are longitudinal, and also serve to establish a circulation of air within them.

19. *What are branches, and their use ?*

They consist of the smallest kinds of galleries, and are the nearest to the chambers.

20. *Why are branches made smaller than any other gallery ?*

Because the stopping up of the mine may be executed with greater solidity, less labour, and with a smaller quantity of materials ; the branches also may be more speedily constructed from being smaller.

21. *What is meant by a return ?*

The angle formed by a gallery changing its direction to the right or to the left.

22. *Explain the dimensions of the various kinds of galleries.*

The great galleries are generally 6 feet high in the clear, and 3 feet or 3 feet 6 inches wide ; the height of the demi-galleries is 4 feet 6 inches, and their breadth 3 feet ; the great branches are made 3 feet high, and 2½ feet wide ; whilst the small branches only are 2½ feet in height, and 2 feet or 2 feet 2 inches in breadth. These dimensions may be occasionally deviated from in respect to the great galleries, demi-galleries, and great branches, but they scarcely admit of any alteration with regard to the small branches.

On account of the small size of the branches, the miner must work there either seated, or on his knees, and crawl upon his hands and feet.

23. *What is meant by permanent galleries ?*

Those which should be constructed long before a siege is commenced, or confidently expected.

24. *How is the ground supported inside of a gallery ?*

In defensive mines, masonry is used for this purpose, in respect to the shafts and permanent galleries ; but woodwork is employed for the other galleries, and for those of offensive mines.

25. *What does the woodwork of a shaft consist of ?*

It consists of square frames which are placed horizontally within the shaft, about 3 feet apart from top to top when in good ground ; and of upright planks reaching from frame to frame in the vertical direction of the sides of the shaft. Each side of the frames has a notch in the middle, which is made with a saw.

26. *What is the woodwork of a gallery composed of ?*

It is composed of rectangular frames, resembling a common window frame, which consist of four pieces, namely, one ground-sill, two stanchions, and one cap-sill ; the ground-sill and cap-sill form the horizontal sides of the frame when it is set up, the former being at bottom, and the latter at top ; the stanchions stand upright, and connect the ground-sill and cap-sill. In good ground, the gallery frames are usually placed 3 feet distant from each other, and sometimes 4 feet in demi-galleries and branches.

Besides the frames, there are roofing planks and side planks, which, extend lengthwise from one frame to the other: the roofing planks serve to cover the top of the gallery, and the side planks to line the sides. These planks may be frequently dispensed with, particularly in small galleries and stiff soil; but it is most commonly advisable to use the roofing planks, unless the gallery is constructed in such a substance as requires no support. Sometimes, too, when it may be done without danger, the planks of the lining are not laid close to each other, but with intervals between them.

27. *When a shaft is to be sunk for the purpose of pushing out a gallery from it, how is the operation usually commenced?*

After the direction of the gallery has been traced on the exterior surface of the ground, a piquet, with a square top notched in the middle, is driven at the intended centre of the shaft, the notch being exactly placed in the direction of the gallery; a particular frame called the top frame, is then used, the side-pieces of which are prolonged at the four corners, and have notches in the middle like the frames made use of inside of the shaft. This frame is laid on the ground in a position strictly horizontal with the piquet in its centre, and the notches of two opposite sides precisely corresponding with the notch on the piquet, and therefore with the direction of the gallery; after which the frame is fixed by means of a piquet in each of the angles formed by the projection of the side-pieces at the four corners, care being taken not to derange it from its position.

28. *The top frame being fixed, how is the excavation of the shaft carried on in good soil, and in what manner is the lining with planks executed?*

The miner begins the excavation inside of the frame, and extends it about $2\frac{1}{2}$ inches beyond each side-piece, taking care to cut the ground perpendicularly: when he has reached the depth of 3 feet, or thereabouts, he takes out all the loose earth, in order to place a shaft frame in a direction exactly parallel to that of the top frame, and in such a manner that the notches of both frames precisely correspond with each other, which may be easily ascertained with a plummet: he then fastens the two frames together, with a brace nailed to them on each side of the angles which their side-pieces form inwardly; this being done, side planks are slidden downwards from the top of the shaft, through the aperture between its sides and the top frame, which planks the miner stops, when on a level with the upper surface of the shaft frame, by putting wedges between them and this frame; after which, he sinks the shaft 3 feet lower, to place another frame just in the same manner as the preceding, and removes the wedges, so as to let the planks loose and slide them down to the frame last fixed, where he stops them with wedges as before: in the room of these planks, others are slidden down from the top of the shaft, and the excavation

is thus continued, placing successively new frames, removing the wedges from frame to frame, and sliding down other planks, until the shaft is sunk as far down as the place where the roof of the intended gallery is to be. The miner then fixes a frame, with its lower surface about 2 inches higher than this roof, and digs the shaft deeper; but he does not use any frame below this, until the shaft having attained its requisite depth, he places the bottom frame, which similarly to the frames above it, should have the notches made in the middle of its sides corresponding exactly with those of the top frame: it is also requisite that its upper surface should be on a level with the bottom of the shaft.

Since the frames above the gallery are to be equidistant, and the nearest of them to it should have its lower surface about 2 inches higher than the roof, the intervals between these frames of course depend upon the distance from the roof of the gallery to the top of the shaft, and may, therefore, be a little more or less than 3 feet, according to this distance. A windlass is used to remove the earth in a basket, when the miner is at such a depth as prevents him from throwing it out at the top of the shaft.

29. *How is the direction of the gallery determined under ground?*

After completing the shaft, the miner carefully examines whether any thing has been moved out of its place in the course of the work, and particularly if the notches of the frames still correspond with each other: he then, at the centre of the shaft, drives a picket with a square head, notched in the middle, the top of this picket being on a level with the bottom of the shaft, and the notch exactly in a line with those made upon the sides of the bottom frame which are parallel to the entrance of the intended gallery. A cord being stretched along the three notches will give the direction of the middle line of the gallery.

30. *Explain the construction of the gallery, and the method of lining it with planks.*

The ground-sill of the first gallery frame is sunk outside and close to the bottom frame of the shaft, so as to be on a level with it as well as with the top of the picket driven at its centre, care being taken that the notches of the ground-sill, frame, and picket, are exactly in a line: the miner then fixes the stanchions, and places the cap-sill upon them, its notch corresponding precisely with that of the ground-sill: the first frame being set, the miner cuts the ground in the given direction of the gallery, so as to place a second frame, about 3 feet distant from the first; the ground-sills of both frames should be parallel to each other, and their notches in a line with the notch on the picket at the centre of the shaft.

In order to form the lining, the miner slides the roofing planks from the first cap-sill to the second, and the side planks from the stanchions of the first frame to those of the next, placing wedges between each

plank and the pieces composing the second frame, so as to leave a passage for the planks of the lining between the second and third frames. The work is continued in the same manner, until the gallery is completed.

31. *What precautions are employed, when a shaft or a gallery is to be constructed in loose ground?*

The miner uses an intermediate temporary frame, lighter than those which are permanent, and places it successively at half the distance between each two of the permanent frames: after placing it he pushes on the planks of the lining, as the work advances, till brought to the distance for the next permanent frame, which being fixed, the miner takes away the temporary frame. When the ground is very loose, further precautions will be required.

Temporary gallery frames are constructed differently from the permanent frames; the stanchions have at both extremities small tenons, which the miner places in mortises made at the ends of the ground-sill and cap-sill. The thickness of the ground-sill gradually decreases from the middle to the ends, so that after the miner has fixed the tenons in the mortises of the cap-sill, he pushes on the foot of the stanchions with an iron bar, upon the top of the ground-sill, until the tenons meet the mortises at the ends: the ground-sill is not to be sunk, but laid upon the surface of the bottom of the gallery.

It is to be observed, that when a gallery of masonry is to be constructed, one of timber is first made, which has larger dimensions than in other circumstances: the shaft of a gallery of this kind also requires to be wider, particularly when it happens to be sunk at the junction of two galleries crossing each other, and where it is wished to procure a larger space than that which galleries generally have, so as to use that space as a depot, or for facilitating the work of the galleries.

32. *If any rocky substance should be met with in excavating a gallery, how may a passage be effected through it?*

The miner makes, with a pick, two vertical grooves about 6 inches wide, and as deep as he can, their height being the same as that of the gallery, and their distance from each other equal to its breadth; he then connects these grooves by two other, which he cuts horizontally; namely, one at the bottom of the vertical grooves, and the other at the top; after which he separates the mass of rock between the grooves, by means of iron wedges which he drives into them with a sledge hammer, and into the crevices of the rock, if there be any, using the pinching bar for separating such pieces as admit of being easily separated with it.

This method supposes that the rock is not of too hard a nature to be conveniently cut; but under different circumstances, it must be blasted, that is, destroyed by gunpowder.

33. *Explain the process for blasting any rock which may intervene in a gallery.*

A hole is made in the rock, in the direction and to the depth required, by means of a borer or boring bit, about $1\frac{1}{2}$ inch diameter, which a miner holds and turns round within the circumference of the hole, whilst another miner strikes upon the flat end with a sledge hammer : the hole when completed is cleared out with an iron scraper, and should any damp remain, it must be removed by means of a piece of cloth or tow fastened to one end of the scraper : a tin or copper funnel, having a pipe at least as long as the depth of the hole, is then introduced, and by the side of the pipe a tube is placed, of a sufficient length to be sunk at one extremity into the charge ; this tube should be carefully made, and filled with composition properly rammed, so as to serve as a portfire : the requisite charge is conveyed to the bottom of the hole through the funnel, observing to draw out the pipe gently, as the powder rises ; fine dry sand is afterwards poured in over the powder, until it reaches the top of the hole, and the tube is then lighted.

Besides the borer, a jumper may be used to make a hole in a rock. The method of employing it for this purpose is as follows : after the hole has been made a few inches deep with the borer, the jumper is introduced, and one man works it up and down, until the hole has its requisite depth.

34. *How is the earth taken out of a gallery ?*

In wheelbarrows, when the size of the gallery permits ; but in smaller galleries, it is handed out in baskets ; or, if the gallery forms no return, a little waggon may be used, which contains about one cubic foot of earth, and has a cord fastened to each of its ends ; one of the cords serves to draw it out of the gallery, and the other to pull it back again.

In small galleries, such as the branches, the miner who has the charge of filling up the baskets, or loading the little waggon, pulls the earth towards him with the bent shovel, as the ground is cut, and then uses a straight shovel with a short handle.

35. *To what distance may the miner generally advance under ground without means being requisite to establish a proper ventilation, and what methods of establishing it may be used when necessary ?*

The miner can scarcely advance to a greater distance than 90 or 100 feet without ventilation, as otherwise the air in the gallery would become so bad as to extinguish the lights, and disable the miner from working. Various means may be used for throwing air into a gallery, but, in common circumstances, the simplest and best ventilator consists of a pair of large forge-bellows, placed at the entrance of the gallery : the miner may also pierce holes through the ground above him with an auger, by lengthening it as much as the thickness of the soil may require.

36. *For what other purposes may the auger be used, besides that of boring air-holes from a gallery ?*

The miner may employ it to search for an enemy's gallery when approaching it, and to ascertain its distance from his own ; and also, for

making a hole in the mass of earth between the two galleries, in order, to establish a camouflet.

37. *How are the miners distributed when excavating a gallery ?*

In great galleries and demi-galleries, the 1st miner cuts the ground, the 2d places the earth in the wheelbarrow, and the 3d miner wheels it out as far as the entrance into the gallery, whence an assistant miner, supplied from the line, conveys it to the spot ultimately assigned for it.

But in branches, the 1st miner excavates, the 2d fills up the basket or the little waggon, which the 3d miner pulls out of the branch into the contiguous gallery ; an assistant miner then puts the earth into a wheelbarrow, and wheels it out to the entrance of the gallery, whence another assistant takes it to the place where it is to be deposited.

38. *What length of a gallery may be completed in a given time ?*

It is known from experience, that in a gallery 6 feet high and 3 feet wide, the lining of which is carefully made with planks close to one another, and where the frames are placed 3 feet apart, the ground between each two frames may be conveniently excavated, and the lining executed, in the course of 9 hours ; and that 6 hours will be sufficient when intervals are left between the planks, and the miners make haste.

As the demi-galleries are only 4 feet 6 inches high and 3 feet wide, and admit, except in bad ground, of the frames being placed 4 feet apart, 18 feet of them, in length, may generally be completed in 24 hours.

With respect to the branches, their deblai is much less than that of the demi-galleries, and their frames being lighter, may be fixed with greater ease and expedition : in good ground, the frames may also be placed further from each other than 3 feet, and as the earth is not so liable to give way in a branch as in a gallery of larger dimensions, the lining does not require as much precaution ; therefore it may be calculated that, in general circumstances, a branch 24 feet long or thereabouts, will be completed in 24 hours, notwithstanding the inconvenient posture in which the miners are obliged to work.

These calculations suppose the work to be carried on without any interruption ; but under different circumstances, an allowance must undoubtedly be made for the time lost. •

39. *What quantity of rock may be excavated in a gallery within a given time ?*

When the pick is used for this purpose, about 18 cubic feet may be excavated within 12 hours, in a gallery 6 feet high and 3 feet wide, as the work may be performed standing ; but a longer time will be requisite in smaller galleries ; and if it is necessary to blast the rock, the excavation cannot exceed 8 or 9 cubic feet in 12 hours.

40. *What dispositions are occasionally made in galleries, so that they may be defended inch by inch ?*

They consist of strong doors, pierced with loop-holes, which are secured by means of small shutters called clappets; these doors are placed in various parts of the gallery, and the besieged miners retire behind them, in order to fire upon the besieger, should he attempt to enter it, or to annoy him with grenades and suffocating balls. Grooves 6 or 7 inches deep, and the same in breadth, are also made in the piers to receive pieces of timber placed horizontally across the gallery, so as to cut off such part of it as are intended to be abandoned. Pits covered with planks, which may be easily removed when necessary, are, likewise, sometimes used for impeding the progress of the besieger within the gallery.

41. *How may the construction of a long gallery be accelerated, and its requisite direction easily preserved?*

After the direction of the gallery has been traced upon the external surface of the ground, several shafts may be sunk at once, from distance to distance, in that direction, their depth being regulated by that which the gallery is to have at the place where each shaft is made. Two brigades of miners, in every shaft, are then to excavate the gallery in opposite directions; by which means such brigades as advance one towards the other, from different shafts, will of course meet, and have only their respective portions of the gallery to construct; which being for a small distance, and the miners hearing one another, the work will be accelerated, and its direction easily preserved.

42. *How is the chamber of a mine to be placed in respect to the branch leading to it?*

It should be placed on one side of the branch, so that the door, that is, the planks which serve to shut up the entrance of the chamber, after loading the mine, may be firmly propped with logs of wood, or with timber 5 or 6 inches square, against the opposite side of the branch; in this manner, the door will oppose a strong resistance to the action of the powder against it, and thus prevent, as well as the stopping up of the branch, a considerable part of the force of the powder, when exploded, from being uselessly wasted in destroying the branch, and perhaps the contiguous gallery; the effect of the explosion in the direction required will, therefore, be augmented.

43. *How is the charge to be lodged in the chamber?*

When the ground is dry, the charge may be enclosed in separate bags, with the precaution of laying hay, or straw, round it; but in a wet soil, it should be placed in a cubical wooden box, the size of which, of course depends upon the requisite quantity of powder: a hole is cut in this box, for the purpose of introducing one end of a narrow covered trough called an auget, which consists of four pieces of plank nailed together, the opening between them being about 1 inch square; the other end of the auget is brought to the place where the stopping up is to terminate, and the mine to be fired.

It has also been suggested to make an auget by grooving longitudinally on one side, narrow pieces of $1\frac{1}{2}$ inch plank, and applying two of these pieces together, with the grooves inwards; but in whatever manner the auget may be constructed, it requires to be made with great care.

44. *Is it proper that any vacant space should be left inside of the chamber, between it and the charge?*

According to experiments lately made, a certain quantity of air being contained between the chamber and the charge, will augment the effect of the mine; but the vacant space left for this purpose ought not to be indiscriminately large, for there are limits beyond which the augmentation of the effect will gradually diminish, and ultimately become nothing. These limits not being yet ascertained, further experiments are requisite in order to determine them.

45. *What is the use of the auget, and how is it to be fixed along the branch?*

The auget serves to convey safely, through the stopping up, the saucisson, or the match used for setting fire to the mine, and it should be nailed upon the ground-sills of the frames, close to the stanchions on the side next to the chamber.

46. *What does the saucisson consist of, and what is the method of placing one of its ends in the box?*

The saucisson consists of a hose, about 7 or 8 tenths of an inch diameter, which is made of coarse linen and filled with powder equally distributed, so as to leave no vacant spaces; one of its ends is placed at the centre of the charge, and fixed in that situation by means of a wooden peg thrust through the saucisson, close to the extremity of the auget; the top of the auget is then nailed upon the sides, the nails being driven with a brass hammer, and it is covered with earth to the height of 6 inches, or thereabouts.

When it is requisite to convey the fire to a mine from the top of a shaft, that part of the saucisson which is placed in a vertical direction, should be supported by sewing it to a rope.

47. *How is the powder taken to the chamber?*

In bags, which are passed from hand to hand to the first miner; he empties them into the box, and puts on the cover; after which, he places the door and props it, so that the stopping up of the branch may be commenced.

48. *What materials are most commonly used for the stopping up?*

Earth is generally employed, being either firmly rammed, or enclosed in sandbags which are placed quite close to each other, so that no vacant spaces may remain.

49. *How far is it requisite that the stopping up should be carried on?*

In order that the stopping up may oppose a proper resistance to the action of the powder, and thus prevent it from taking its direction

through the branch, this resistance should be at least equal to that of the ground surrounding the chamber; and it has been ascertained by experiments, that, in clayey soils, or in those which are tolerably compact, the resistance arising from the tenacity is equal to that from the mass: but the earth employed for the stopping up having lost its tenacity, from being moved, whilst on the contrary that of the ground surrounding the chamber is fully preserved, it evidently follows that if the stopping up merely consists of earth, without using any particular means of augmenting its resistance, the want of tenacity of the earth must be compensated for by doubling the mass; that is, by extending the stopping up to twice the length of the line of least resistance. This dimension may be reduced to once and half that length, and even less, by the addition of logs of wood in the stopping up; these are placed across the branch, with each end resting against the stanchions of every frame: and the same diminution may also be made when the branch leading to the chamber proceeds from another branch, or any other kind of gallery, which is not further distant from the powder than about once and half the line of least resistance.

It is to be observed, that, as there is necessarily as much difference in the tenacity of the various kinds of ground as between their constituent parts, the proportion between the resistance arising from the tenacity, and that from the mass, admits of different modifications according to the soils.

50. *By what other means may the extent of the stopping up be reduced, and even entirely dispensed with?*

By augmenting the charge proportionally. According to late experiments, $\frac{1}{4}$ of the quantity of powder requisite when the branch is stopped up for such a length as the rule directs, being added to the charge, will allow the stopping up to be made $\frac{1}{2}$ shorter, and by adding $\frac{1}{2}$, its length may be reduced to $\frac{1}{4}$; a double charge will render the stopping up quite unnecessary.

The same experiments have also shewn, that, if it be required that a mine, which is placed at the bottom of a shaft, should produce a funnel having its diameter equal to twice the line of least resistance, the charge must be $\frac{2}{3}$ stronger than would be requisite, supposing the mine to be established at the extremity of a branch stopped up for twice the length of the line of least resistance.

51. *What methods of setting fire to a mine, may be used?*

This may be done with the monk, the trap, or the mouse; the monk and the trap require the use of the saucisson, but the mouse does not, require it, and consequently should be preferred, as the saucisson has the inconvenience of producing a quantity of smoke, which prevents the miner from stopping up the opening at the end of the auget, immediately after the explosion; therefore, not only the smoke occasioned by the saucisson, but also that arising from the mine fills the galleries, and renders them uninhabitable for some time.

52. *What does the monk consist of, and in what manner is it used?*

The monk consists of a piece of match about 1 inch long and $\frac{3}{16}$ chin thick at the base, the top of which forms a kind of point. In order to use it, the miner makes an opening at the end of the saucisson, and lays loose powder round it, which he covers with a square piece of paper kept in its place by means of a small stone at each corner, besides being covered with a little sand, or dry earth, to prevent accidents. In this piece of paper a hole is made, through which the monk is passed in an upright position, so that its base, which is rubbed with meal powder, may reach the loose powder spread round the end of the saucisson: the monk is lighted at the same time with another piece of match of similar form and dimensions, which is called the witness, and the miner then retires to a proper distance, taking the witness away with him, which by burning gradually, serves to shew him nearly the instant when the explosion is to take place.

53. *Has not the monk some defects?*

It frequently fails, either because the miner has not lighted the match properly, or on account of its being extinguished from the dampness of the branch, and the want of a proper circulation of air. Besides, some time is requisite before the monk can convey the fire to the saucisson, as it burns gradually; and this inconvenience is very material, when the object of the mine does not admit of the explosion being retarded.

54. *What is the trap?*

A wooden box about 4 inches square within, and 20 inches high, which is open at top and bottom, and made of boards 2 inches thick, so that it may stand firmly. In one side of the box, at about 1 foot from the bottom, an opening is made to receive a flat board, which may easily slide in and out, and has a ring to which a packthread is fastened sufficiently long to be drawn out, to the distance of three or four times the line of least resistance. The packthread is supported at the same height as the sliding board by props nailed to the frames of the gallery.

55. *Explain the method of using the trap.*

The miner cuts an opening at the end of the saucisson, and places the trap over it; he then throws loose powder into the trap, puts in the slider, and upon it two pieces of match, which are tied together in such a manner as to present four points; these points are lighted, and after the miner has covered the trap with a thick board, he retires to the end of the packthread, which, by being pulled, draws out the slider, so that the match falls upon the loose powder in the trap, and sets fire to the saucisson. This method has the advantage over the monk, of being a more certain way of firing a mine at the moment its effect is required.

56. *What is the mouse?*

It consists of a small chain 15 or 16 inches long, having a ring at each end, and at the middle of the chain slow match is twisted round it for 4 inches in length, and about 1 inch diameter. A string of a suitable

length is tied to each ring; and one of those strings is placed in an auget lying in a straight direction on each side of the branch, except near the chamber, and at the point of meeting of the side opposite to it with the next gallery; the auget is curved in these two places, and the string should project out of it in the latter. A hole is made in that part of the auget which is contiguous to the charge, and some loose powder is thrown there; consequently, upon pulling that end of the string which is out of the auget, and the mouse being previously lighted, it will be brought into contact with this powder, which, when inflamed, will set fire to a saucisson extending only from the auget to the centre of the charge; and as this saucisson is so short, it will not have the same inconvenience, in respect to the smoke, as if it traversed the stopping up; but it is requisite that the miner should shut up with sand-bags, immediately after the explosion, the openings at both ends of the auget, so as to prevent any smoke of the mine from passing through them into the gallery. The auget should also be carefully planed inside, and its parts exactly fitted to each other, so that nothing may impede the motion of the mouse.

57. *Has any certain theoretical information been yet obtained, respecting the various phenomena which mines present?*

Such information would require that the nature of the forces arising from the inflammation of the powder should be positively known, as well as the manner in which these forces act upon the ground surrounding the chamber; and whatever ideas have hitherto been suggested on this subject, only rest upon supposition which are more or less probable. It is to be observed, likewise, that, as the action of the forces upon the surrounding ground depends on its nature, which may be indefinitely varied, the effects may also vary ad infinitum, and therefore every different case would require a particular investigation.

58. *Explain the circumstances successively observed when a mine is fired in a tenacious and compressible soil, the charge being sufficient to produce an external funnel.*

As soon as the fire is conveyed to the charge, a hollow noise is heard, and the earth shakes; the ground immediately surrounding the line of least resistance then rises in the form of a spherical segment, which gradually augments until smoke comes out of the periphery of its base; very soon after follows the explosion, when the ground which forms the spherical segment is blown up in the shape of a sheaf; some of this ground falls again into the funnel, whilst the rest is scattered about or heaped up around the edges; and the violent commotion arising from the explosion communicates a strong movement of vibration to the particles of ground round the focus, which movement extends more or less according to the tenacity, density, and elasticity of the soil, and also causes the cavities contained within this sphere of action to be filled.

59. *What is the figure of the funnel of a mine?*

It has been attempted to determine it precisely by mathematical calculations, but such an investigation is a pursuit absolutely chimerical, as this figure will not be exactly the same in two instances. A sufficient approximation to the truth, for practical purposes, will be obtained by supposing the funnel to be the frustum of an inverted cone cut off by a plane passing through the centre of the charge, the frustum augmenting as the charge is increased. Some engineers are of opinion, however, that, as part of the ground below the chamber is raised up with the ground above it, the charge found for the contents of the funnel should be augmented $\frac{1}{30}$.

60. *What rule will give the requisite charge of a mine, in order that the diameter of the funnel may be equal to twice the line of least resistance?*

The cube of the number of feet which the line of least resistance contains, should be multiplied by $\frac{1}{10}$, so as to have the solid contents of the funnel; and these contents being multiplied by the requisite quantity of powder to raise one cubic foot of the soil where the mine is fired, will give the charge.

Another rule for ground of a middling tenacity, is to divide the cube of the line of least resistance by 10, disregarding fractions, and the quotient will be the quantity of powder in pounds.

61. *What is the requisite quantity of powder to raise one cubic foot of the various kinds of soil?*

According to the latest experiments, common earth mixed with sand requires 14 drams; but if the charge thus found is called 1. it must be increased to 1.36 in strong sand or sandstone; to 1.45 in potter's clay; to 1.53 in loose or moveable sand; to 1.61 in old masonry, and to 1.78 in freestone and rock.

62. *Why should greater charges be used in loose sand, old masonry, freestone, and rock, than in any other substance?*

As loose sand is of an incompressible and untenacious nature, it allows the powder when inflamed to penetrate through the interstices between the grains, and thus to reach the surface of the ground without much resistance; consequently, by using an ordinary charge, merely proportional to the weight to be raised, the funnel would only form a kind of pit round the line of least resistance; and it is necessary, in order to make up for the deficiency of the soil in point of compressibility and tenacity, to employ an increased charge, which may enable the elastic fluid produced by the inflammation of the powder to embrace at the same instant a greater volume round the centre, and thus to carry up a greater mass. It is to be observed, that, notwithstanding the augmentation of the charge, the funnel will not have the same appearance as in a compressible and tenacious soil.

In respect to old masonry, freestone, and rock, and particularly when they are very hard, an ordinary charge would frequently produce only

cracks, through which the fluid would escape ; therefore, it is requisite to augment the charge, or else to extend the stopping up to a greater length, and use more timber in it, in order to increase the resistance. The funnel in these substances is in general very irregular.

63. *Have not tables been contrived in order to determine the requisite charges of mines, in order that the diameter of the funnel may be double the line of least resistance ?*

Tables of this description have been made from experiments carried on in various kinds of ground ; the line of least resistance in these tables has an assumed length ; but as, on account of the funnels being nearly similar, their solid contents are proportional to the cubes of their homologous sides, the tables may be used in finding, by the following proportion, the suitable charge for any other line of least resistance in the same kinds of ground as those where the experiments took place.

“ As the cube of the line of least resistance in the tables, is to the charge which they give, so is the cube of the line of least resistance of the mine required, to the requisite charge.”

64. *What precaution is it requisite to take in determining the requisite charges, whenever an important subterraneous warfare is intended ?*

A perfect homogeneity being seldom met with, even in such kinds of ground as are of the same general nature, it will be proper to try the charges obtained from the tables, or otherwise, in a ground similar as much as possible to that where the mines are actually to be constructed, so as to augment or diminish them as may be requisite. A few experiments will be sufficient for this purpose.

65. *What alteration takes place in the effect of a mine, by diminishing or augmenting the charge ?*

Since gunpowder acts in all directions when exploded, the whole effect of a mine may be considered as being composed of two partial effects, and these may be distinguished from each other by the names of outward and inward effects : the funnel arises from the outward effect, and the inward occasions the subterraneous commotion which takes place and extends beyond the funnel ; both these effects gradually become smaller as the charge is diminished, in such a manner, that, when the quantity of powder is too small to overcome the resistance of the ground above the chamber, no external funnel is formed, the utmost effect which may be produced consisting of crevices at the surface of this ground ; whilst, on the contrary, the funnel and the commotion will be increased by augmenting the charge. It appears, however, that there are limits beyond which the diameter of the funnel will not become longer from the charge being augmented, although the commotion will extend farther ; the reason is, that the resistance of the ground above the chamber being then much too small, this ground will be almost instantaneously raised, and as the powder will thus find

an issue, its lateral action will not last for such time as would allow the diameter of the funnel to acquire a greater length. These limits being not yet precisely known, experiments are still requisite in order to determine them.

It follows from these investigations, that if two mines with equal charges are fired in the same kind of ground, but their lines of least resistance being different, the mine having the shortest line of least resistance will have the largest funnel.

66. *What are surcharged mines, and their purposes ?*

Surcharged mines consist of such mines as are loaded with a quantity of powder much exceeding the charges used for ordinary mines, so that the violent commotion which they produce may destroy an enemy's works at a greater distance. Their funnels also afford more cover, as they are wider.

67. *Are surcharged mines suitable for defending places ?*

They generally may be used to greater advantage in attacking them, as it is important for the besieger to obtain much cover, and especially to destroy the galleries of the garrison from a great distance ; whereas, on the contrary, the besieged is interested in giving but little cover to the besieger, and in avoiding the destruction of his own galleries by his own mines. Besides, surcharged mines require a great quantity of powder, which cannot always be conveniently spared in a fortress, whilst the besieger most frequently has it in his power to receive any supply which he may want.

68. *Who made the first experiments relating to surcharged mines, and what were the results ?*

These experiments were made by Belidor, who contrary to the prevalent opinion at present, thought that the effect of any mine only consists of the compression of the ground surrounding the chamber; with charges equal to ten times those employed for mines in which the superior diameter of the funnel has twice the length of the line of least resistance, this diameter was increased to something more than five times that length, and galleries were destroyed at a distance from the chambers of four times the line of least resistance, these galleries being constructed in different planes : galleries sunk underneath the chambers by a quantity equal to the line of least resistance, and even greater, were also burst.

69. *What is Belidor's rule for calculating the quantity of powder requisite for surcharged mines, and any others, the line of least resistance, and the diameter of the funnel being given ?*

First, he finds what he calls from his theory the radius of compression of the intended mine, that is, the line measuring the distance from the centre of the charge to the edge of the funnel, and which forms

the hypotenuse of a right-angled triangle, having the line of least resistance and the radius of the funnel for its other sides; this done, he determines the radius of compression of any assumed mine, the line of least resistance of which is known, as well as the charge suitable for this mine in order to produce a given funnel in the same kind of ground as that where the intended mine is to be fired; then, considering the charges as proportional to the cubes of these two radii, he makes the following proportion.

“As the cube of the radius of compression of the assumed mine is to its charge, so is the cube of the radius of compression of the intended mine to the quantity of powder requisite for this mine.”

According to the theory of Maresot, a modern French engineer, the charges should be made proportional to the squares of the radii of the funnels multiplied by the radii of compression, or as they are now called, the radii of explosion.

70. *The charge of a mine and the line of least resistance being given, how is the diameter of the funnel to be found by Belubyr's rule?*

After determining the cube of the radius of explosion of any mine, the line of least resistance, and the diameter of the funnel of which are known, as well as the requisite charge to produce this funnel in a soil of the same kind as that where the intended mine is to be fired, the following proportion should be made.

“As the charge of the assumed mine is to the cube of its radius of explosion, so is the charge of the intended mine to the cube of the radius of explosion of this mine.”

By squaring the cube root of the latter radius, and subtracting from this square that of the line of least resistance, the remainder will give the square of the radius of the funnel, from which this radius, and therefore its double, may be found.

71. *By what rule may the requisite size of the box for powder be found?*

As one cubic foot contains 57 lbs. of powder, the weight of the given charge should be multiplied by 30, and the cube root of the product will be the size of each side of the box in inches.

72. *What is meant by insulated mines, and conjunct mines?*

Mines are said to be insulated, when being in the same plane, the distance between them is such as to prevent the funnels from penetrating into each other, and only allows their great circles to be tangent; whilst conjunct mines being nearer, their funnels will intersect one another.

73. *Is it requisite that insulated mines should have the same charges as conjunct mines?*

On account of the funnels intersecting each other, part of the solid raised by two conjunct mines is acted upon by both of them, and therefore it is proper, in order to avoid an useless expense of powder, that the charges should be diminished accordingly.

74. *Are conjunct mines much used at present ?*

Insulated mines are generally preferred, conjunct mines being seldom employed except to make wide breaches in the escarp.

75. *May not mines be situated in more than one plane ?*

They may be placed in one, two, or three different planes one below the other, and which are parallel to the surface of the ground above the chambers, this surface being supposed to be a plane. The mines sunk to the smallest depth form what is called the first stage, the second stage being immediately under the first, and the third under the second. The communications with each stage consist either of galleries, or of great branches, conveniently disposed.

It is to be observed, that when several stages of mines are formed, the chambers are not placed vertically under each other, but obliquely, at a proper distance. The number of stages seldom exceeds three.

76. *In what circumstances are several stages of mines used ?*

When it is intended to stop an enemy longer on the same spot, by repeatedly destroying the works which he may successively construct there. For this purpose, fire is set first to the mines in the upper stage, then to those in the second, and ultimately to the mines in the third stage.

77. *What modifications are requisite in respect to the charges, when mines are disposed in several stages ?*

The mines in the first stage require the usual charges, and even occasionally admit of a greater quantity of powder; but, as the principal effect of the mines in the second stage will take its direction towards the funnels produced by the explosion of those in the first, and the tenacity of the ground to be raised being thus partly destroyed, the charges of the mines in the second stage should not be regulated according to the whole length of their line of least resistance, measured from the surface, but this length should be diminished by half that of the line of least resistance of the mines in the first stage, and therefore the charges will be smaller. The same rule is also applicable to the charges of the mines in the third stage; that is, they should be regulated according to the length of the line of least resistance of these mines, lessened by half that of the line of least resistance of those in the second stage.

78. *What should be the distance of a mine loaded with an ordinary charge from any other mine, and any gallery situated in the same plane, so as to secure those last from the effects of the explosion ?*

Various experiments have been made in order to ascertain this distance, and although the results were not exactly the same, undoubtedly on account of some differences in the nature of the soil, yet it was found that no security can be depended upon, without the distance in question being equal to twice the length of the line of least resistance of the mine to be exploded.

When mines form different stages, it is not requisite that the distance between those in the lower stages should be double the whole length of their line of least resistance, measured from the surface of the ground, as the effect produced by the explosion of the mines above them allows this distance to be smaller, like the charges.

79. *If several stages of mines should be formed, what is the requisite distances from the mines in one stage to those in the next, and also to any gallery below them ?*

Experiments made for the purpose of determining this distance have shewn that it may be reduced to between once and half, and twice the line of least resistance of the mines to be first fired ; and particularly when it happens that the ground becomes more compact as the depth increases, the precise distance depending upon the differences observed in the nature of the soil. For greater security, however, a few experiments should be made on the spot where the mines are to be constructed.

80. *In what manner is the required distance between the mines in one stage, and those in the stage immediately below to be measured ?*

Since this distance is the hypothenuse of a right-angled triangle, of which the vertical distance from stage to stage is the perpendicular, it is simply requisite to find the base of that triangle, and to lay it down horizontally.

81. *By what means may the requisite depths or levels be gained in mining, besides using shafts for that purpose ?*

Ascending or descending galleries may be made, which require steps when the difference of level between their extremities is great ; but under any other circumstances, a simple slope without steps will be sufficiently convenient. In order to regulate this slope, the difference of level between the extremities of the galleries should be divided by their length.

82. *Should it be required to fire several mines at the same time, how may this be effected ?*

By leading the train from each mine to a common focus, called the focus of ignition, where fire is set at once to all the trains. They should be exactly of the same length, on which account those extending to the smallest distance should not be laid in a straight direction, but should be bent in the auger.

83. *May any place admit of being defended by mines ?*

This additional means of defence only suits such places as are sufficiently strong, independently of mines, to require a regular siege, whilst the nature of the fortifications allows the requisite time to the garrison for completing, before the third parallel is constructed, all the dispositions under ground which cannot be commenced until the front of attack, and therefore the direction of the approaches, are determined: the ground which the galleries and branches are to traverse should also be dry, and free from currents of water; besides, mines require a considerable supply of timber, tools, and powder, of which very small fortresses do not admit; but they may be used to great advantage for places of the 1st and 2nd order, and particularly when two or three fronts only can be attacked.

84. *Explain the general principles upon which any system of defensive mines should be founded ?*

The arrangement of the various parts of the system should be so combined with that of the works above ground, as to establish the most immediate relation of defence between these works and the mines, whilst the general disposition of the galleries affords simple and speedy means to the garrison of executing any subterraneous operations which circumstances may require. The chambers should be placed in such a manner as to form salient and re-entering parts, the branches being either short, or with one of their extremities turned towards the besieger. By this means, the chambers and branches will be less exposed, and the besieged miners will have it in their power not only to impede the operations of the besieger, after he has advanced between the mines, but also to cut him off. Likewise, the longitudinal and transverse galleries require to be advantageously combined for the purpose of ventilation, and such of them as lead to any disposition of chambers should be independent of those leading to others. Besides, in order to prevent the besieger from penetrating into the galleries which the garrison has abandoned, the chambers should be so arranged, that these galleries may be destroyed by the explosion either of the last mines of the disposition to which they lead, or the first mines of the nearest disposition behind; and it is requisite too, that the mines should embrace such space in front of the salients of the works, as will not allow the besieger to avoid them, supposing that for this purpose he should approach on one side of the capitals, instead of following their direction. The greatest obstacles should be opposed to the construction of the cavaliers of trenches, counterbatteries, and breaching batteries, as well as to the passage of the ditch; and the means should be prepared for placing mines underneath the breaches and inside of the works. Communications with the gallery of counterscarp should also be pushed out under the ditch, when possible, from large souterrains constructed at the gorge of the bastions.

The mining operations at Bhurtpoor were in progress when we received the above communication, which led us to publish it, as affording matter of interest, with reference to that siege, a narrative of which is, we understand, under preparation by those most fitted for the task.—ED.

ART. V.

ON CASTRATION IN THE NATIVE CAVALRY.



To the Editor of the British Indian Military Repository.

SIR,

I am a Cavalry Officer, and I have often been compelled to listen with regret to the complaints that have assailed me on all sides, respecting the numbers of horses castrated in the regiment. As I usually pass the night in revolving schemes for the benefit of the service, instead of idly sleeping, as ignorant people suppose, I trust I have at last hit upon a method of preventing any future murmurs on this subject. My plan is, to proceed immediately to geld all of the horses in the service, that have not been already submitted to that admirable operation; and I regret that nature denies us the power and gratification of performing it on them more than once. Let no man meet me on the threshold, by maintaining it would be better to put a stop to castration altogether; for it will presently appear, that in that case many highly important advantages would be entirely lost. Luckily we may always convert stone horses into geldings, although there be no receipt extant for restoring to the latter the trifling and unimportant rights and privileges of which they have been deprived. The following indisputable reasons will make the nature of my proposal obvious to the most obtuse understanding.

1st. Geldings are almost universally used in England, therefore geldings, and nothing else but geldings, should be used in our Indian cavalry. It is clearly our policy to introduce into this country all European customs; these must always be right, they cannot be wrong. On what other principle than English custom do we continue to ride in saddles as slippery as glass, from which we are jerked half a yard whenever the horse moves his leg, though we see every fat Bunya sitting with ease and confidence in one of native construction? On what other principle do we persist in sweating un-

der a load of tight European clothes and accoutrements, in a country to which they are so little suited; or continue to serve out costly European blades as swords to our troopers, which are always changed for the native tulwar, when there is a probability of action? It is a maxim amongst all thoroughbred Englishmen, that whatever is the custom in England, is necessarily the best custom in the world; and it would ill become the children of so enlightened a nation, to adopt any improvement from a set of ignorant, prejudiced, good-for-nothing black fellows.

2d. By castration, we shall preserve the uniformity of a corps. The high value of this subject may be conjectured from the great stress that is always laid upon it. I have seen a man as soundly rated for having a wrong button on his coat, as if he had disgraced himself in a general action: nay the very breeches that cover one's catastrophe are very properly subjected to a scrupulous inquisition, lest the discipline of the whole corps should be affected! Now it is evident, Mr. Editor, that were there none but geldings in the service, the eye would become gradually reconciled to their rough and languid appearance; but at present it is really distressing, after observing one of these geld creatures, with all the deformities peculiar to that condition, to see him followed by a perfect horse, with his coat beautifully sleek, his eye full of fire, his nostril expanded, his crest proudly curved, and his body thrown upon his haunches, cruelly exulting in his superiority over his mutilated companion!

3d. It is observable, that nature has given to the gelding an increased length of hair in the cold weather, which must be an amazing comfort to the poor animal. Other horses are at the mercy of a Syce, who often filches from them their blanket, to wrap about his own body; but the favoured gelding is rendered by nature independent of such rascality, having in the increased length of his coat a natural source of warmth about him of which he cannot be deprived. Perhaps, under a general system of castration, a part of the clothing usually supplied by troop officers might be advantageously dispensed with.

4th. It is notorious that the temper of stone horses is often ruined by their being allowed to cover mares, or to run loose and fret themselves on tattoos; and this mischief, I ap-

RELATIVE TRANSVERSE STRENGTH OF CERTAIN WOODS.

We have been induced to submit to our Readers the following Results of Experiments made to try the Relative transverse Strength of certain Woods, at Cossipoor Gun Carriage Manufactory.

No. of the Specimen.	Nature of Timber.	Average specific gravity of the three specimens.	Average deflection in inches at the time of breaking.	Average weight in pounds that broke each piece.	Value of L^3 from formula $S = \frac{W L^3}{4 I \Delta^3}$	Value of S from formula $S = \frac{W L^3}{4 I \Delta^3}$	REMARKS.
1	Bongal Soundry, seasoned.	10023	4	13841	400	2595	This wood broke short, without splinter, with a very strong long fibre, like a handle of matches.
2	Morning Sand Chloewers, seasoned.	820	4	1319	385	2173	This wood broke very gradually, with considerable splinter, but with a remarkably stiff strong long fibre, like that of the Soundry.
3	Morning half or Neem Sand Chloewers, seasoned	958	4	13091	432	2455	Ditto.
4	Morning Sand Chloewer, not seasoned.	1182	4	1261	451	2152	Broke in halves, strong fibre, short fracture.
5	Morning Sissoes, seasoned.	764	3	1231	480	2308	This wood broke, one with a short, and the other with a very long fracture.
6	Morning Sissoes, not seasoned.	962	3	1225	491	2208	The same remark as in the other Sissoes.
7	Morning Sand Chloewer, seasoned.	762	3	1179	500	2208	Broke in halves, strong fibre, short fracture.
8	Morning Sand Chloewer, not seasoned.	830	3	1179	500	2208	Broke in halves, strong fibre, short fracture.
9	Range of Good Hope, <i>Strak wani</i> , seasoned.	729	3	1123	511	2106	This wood broke gradually, its appearance at the fracture not unlike the Soundry.
10	Range of Good Hope, <i>Strak wani</i> , not do.	7671	3	1109	520	2092	Broke in halves.
11	Java Teak, seasoned.	6911	3	1109	600	2079	This Teak broke very gradually, with a very long splintered fracture.
12	Morning Sand Chloewer, not seasoned.	1062	3	1095	600	2053	Broke in halves, strong fibre, short fracture.
13	Rangoon Teak, Shalhin.	702	3	1091	551	2046	Broke into halves, very strong long fibre, short fracture.
14	Morning Sand Chloewer, not seasoned.	918	3	1085	600	2031	Broke in halves.
15	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	This Teak broke gradually, bending into two separate pieces, with a long splintered fracture.
16	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
17	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
18	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
19	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
20	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
21	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
22	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
23	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
24	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
25	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
26	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
27	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
28	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
29	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
30	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
31	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
32	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
33	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
34	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
35	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
36	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
37	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
38	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
39	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
40	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
41	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
42	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
43	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
44	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
45	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
46	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
47	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
48	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
49	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
50	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
51	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
52	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
53	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
54	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
55	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
56	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
57	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
58	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
59	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
60	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
61	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
62	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
63	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
64	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
65	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
66	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
67	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
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69	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
70	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
71	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
72	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
73	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
74	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
75	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
76	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
77	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
78	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
79	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
80	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
81	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
82	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
83	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
84	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
85	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
86	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
87	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
88	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
89	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
90	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
91	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
92	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
93	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
94	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
95	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
96	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
97	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
98	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
99	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.
100	Morning Sand Chloewer, not seasoned.	918	3	1010	611	2011	Broke in halves, long splinter, short fracture.

N. B. Each specimen was 72 inches in length (50 inches between the points of support) and two inches square; the ultimate deflections in the centre of the piece only were measured. The values of U and S have been calculated from Barlow's formula in the valuable "Essay on the Strength and Stress of Timber," as a ready means of contrasting the above specimens with those contained in his work, and also for facilitating calculations for the strength of beams of Teak and Sual, from the problems given by that author.

Those who may be in possession of Treigold's "Elementary Principles of Carpentry," will not be at a loss to render these experiments available under the rules given by him, when they bear in mind, that the constant C Treigold is precisely one third the value of S in Barlow's essay above referred to. Those disposed for further investigation, can obviously extend the utility of the above table of experiments.

The Soudry wood referred to in these experiments is the "Heritiera Minor" of Roxburgh. The Soul, the "Shorea Robusta" of Roxburgh. The Sissoo, the "Dalbergia Sissoo" of Roxburgh. The Teak, the "Tectona Grandis," of Linnaeus. The Ton, the "Cedrela Toona" of Roxburgh. The Soudry was obtained from the Sunderbunds, and is used in Bengal for the forests north of the Ganges line, between the 25th and 31st degrees of North latitude, and in the vicinity of Calcutta, and for poles. The Soul and Sissoo are obtained from the forests north of the Ganges line, between the 25th and 31st degrees of North latitude, and for the teak exclusively for roofing beams, and for door and window frames in Bengal buildings, and for the beams, cheeks, transoms, poles, and framing of gun and ammunition carriages, as well as for spokes, naves, and felloes occasionally. Sissoo is applied chiefly to naves and felloes; it is likewise used for beams, cheeks, also for spokes and framing. Teak is chiefly employed for planking, boxes, &c. A Chowker is a tree squared on four sides, a Diowker one squared on two sides only. The former is the larger sized tree.

prehend can only be effectually checked by putting it out of the power of the horse to play such tricks in future. Nor can it be accounted a trivial advantage, that many vicious brutes would thus be prevented from propagating their defects of form and temper, and people might be compelled to resort to the stud alone for stallions, whereby a purer breed of horses would be encouraged, and the interests of our honourable masters be best consulted.

5th. This plan would obviate a great deal of jealousy amongst the troopers. All our cavalry dislike riding geldings, on account of their peculiar tricks and uneasy paces: be the allotment of them therefore what it may, it makes one portion of our men ungrateful, and the other discontented. The native officers too find an opportunity of displaying partiality towards men of their own caste, by procuring perfect horses for them. But when every horse is reduced to the same level, and the men see their superiors mounted on rips like their own, all idea of favoritism, and consequent discontent, must vanish.

6th. We should not only destroy jealousy among the men, but also among the horses themselves. We all know how annoying it is to compare our misfortunes with the prosperity of those around us; and why should dumb animals be supposed exempt from such feelings? Were they even kept in separate troops, they might be saved from many insults; but to be hourly mortified by a parade of the masculine vigour of their more fortunate neighbours, is really too much even for a gelding, and hence no doubt arises that determined spitefulness they commonly display. There are other causes of envy that would cease, if this plan were adopted. At present no officer will select a gelding from the ranks, nor will people purchase him when cast; but if the regiment consisted of none but castrated horses, all such odious distinctions would necessarily vanish.

7th. It must be the desire of all who value harmony in a corps, to get rid of a common source of disagreement between the commanding officer and his juniors, the former complaining of the unruly temper of the horses, and the latter vexed at his interference, and very improperly shewing their spirit, in resisting, or their dexterity in eluding it. I have often

been shocked to hear a troop officer protesting that every brute in his stable was the most meek, peaceable, innocent creature alive; and swearing, to the utter ruin of his conscience, that the knife is not in the slightest degree required. Yet as emasculation has been pronounced a specific, not only for vice, but for all faults and diseases whatever, it will probably be performed some time or other on most of the horses in the service. Since prevention then is better than cure, let us go the shortest way to work, and anticipate the mischief, by making the bad good, and the good better. Nor let the younger officers sneer at this supposed connection between the *propria quæ maribus*, and other parts of the system. Evils are not always best attacked by local remedies; for what schoolboy is ignorant, that the only way to get knowledge into the head, is to hammer it resolutely into the tail.

8th. It is well known that geldings are peculiarly apt to start; and, as all the men are liable to be obliged to ride them, it is better that they should be constantly accustomed to this trick, which might otherwise disconcert them. Now I take this habit of starting to be a most valuable qualification. Many a lubberly trooper, on a perfect horse, will go to sleep in a night march, and perhaps fall into an ambuscade, and be cut to pieces: whereas the gelding will never pass a moderate sized obstacle without shying to the other side of the road; thus displaying a degree of caution and alertness, that must afford an admirable example to the rider, and compel him to adopt some portion of it, whether he will or no.

9th. If ever it should be our fate to meet with serious opposition in the field, (and soldiers, I suppose, are meant to fight occasionally,) our mixture of geldings and stone horses will be productive of peculiar inconvenience. Those who may be mounted on the latter, would in any long march find their comrades unable to keep up with them, and thus both parties might be exposed to imminent danger; and if we were to attempt to charge a square of infantry, it must be obvious to every one that a little file firing would drive all the geldings out of the field. Now it is surely unfair, that the officers, and one half of the men, should thus be exposed to unequal conflict. But were all the horses castrated, with what beautiful precision would they not “shew front to the rear,” and carry

us as soon as possible beyond the reach of all danger. Thus no disgrace would fall on any particular individual, but all would wear the appearance of order and regularity, and many valuable lives be preserved for future service.

I am,

Sir, &c.

PHILIP.

NOTE. In inserting the above jeu d'esprit, we beg to say, that we shall always be glad to hear from our correspondent Philip, whether in serious or in sportive mood. We have taken a few liberties with his letter, which we trust he will excuse.—ED.

ART. VI.

DUPIN'S TRAVELS IN GREAT BRITAIN.

In the "Bulletin des Sciences Militaires" for September 1825, there is a review of *the second part of the Chevalier Dupin's Travels in Great Britain*, a translation of which, we hope, may not prove unacceptable to our readers.

The French reviewer begins by observing, that the English soldier, according to M. Dupin, has less penetration and vivacity in his character than belong to the French; and that hence arises his greater regularity of conduct. If his actions be free from those sudden impulses which distinguish the latter, his steadiness, in a given time, invariably produces more satisfactory results. We cannot (says the French reviewer) subscribe to this opinion: the cold and phlegmatic character so much boasted of by the English, appears to us less calculated to support hardship and misfortune, than the ambitious ardour which distinguishes the French. It would, however, be a difficult task to draw any accurate conclusion as to the moral firmness of the two nations from their recent struggles; for the paternal attention of their government, in providing an ample Commissariat, has allowed the British to want for almost nothing. Well clothed, and well supplied with nutriment, they have generally had to measure their strength against men indifferently fed, and frequently half naked*. Is it then a matter of wonder that the British, under such circumstances, should have gained some advantages? But we exaggerate their success, and almost forget the achievements of our own nation. What firmness of mind, what energy must not those troops have possessed, who subdued Holland in the

* Was this the case at Corunna? Vimiera? Talavera? (after which the English army was forced, from mere starvation, to retreat,) Toulouse? or, not to enlarge the list, at Waterloo?—*Editor Military Repository.*

severe winter of 1794, who maintained their position on the frozen heights of the Alps and Appenines in 1794-5, who defended Genoa in 1800, and who, reappearing on the plains of the Elbe, made up for the disastrous issue of their campaign in Russia ! Are these to be compared with the men who fled from Tqulon in 1793, because they found themselves beset, though in a well armed, fortified, and untouched garrison, which afforded them every facility for obtaining supplies from the sea ; to those who capitulated at Alkmaer in 1799, under an apprehension of a deficiency of supplies ; and at Buenos Ayres in 1808, because they had been repelled in one assault ; or on the borders of the Scheldt in 1809, from fear of a fever ?

Authority, which, in England, endeavours to cover all its acts with the garb of religion, has imposed on the troops of Great Britain the necessity of an oath of fidelity to their sovereign before they can serve under his standard. This ceremony is not collective, as was once practised in France, but every individual is compelled to subscribe his own obligation. The author observes, however, and experience has afforded us additional proofs, that this obligation does not bind individuals to their allegiance : desertion to the intefior is very common with the British, and to the enemy much more frequent than with us. There are indeed many orders of the day, published by Wellington, which prove that, even when success had deserted our standards, crowds of British soldiers deserted theirs to join us.

In a country where the suppression of public liberty is attempted under the shadow of religious reform, it is not surprising that the government should endeavour to retain its army in the established faith of the realm. Accordingly, besides those of the ordnance, every brigade of infantry or cavalry has a chaplain appointed to itself. Their duties are much more arduous than those of the Almoners of the French army : they are bound to superintend the regimental schools ; to visit, at least twice every week, the hospital of their brigade, and to perform service repeatedly every Sunday, to as many as the church will contain, until all have attended. These chaplains, in all that concerns the duties of their office,

are under the command of a chaplain general, who receives his instructions from the Commander in Chief*.

The troops who attend divine service, are conducted there under arms, with the exception of the Irish Catholics, to whom entire liberty is granted to perform their own ceremonies, when it can be done without interfering with duty.

In England, there were formerly no military distinctions, except for the nobility; it was not until 1815, that any officer, undistinguished by birth, was presented with the order of the Bath. This order, like that of the Legion of Honour, is destined as a recompense for uncommon merit, whether civil or military: it is not, however, so popular as the French order; it is never seen decorating the breast of the private soldier. The only honour to which a brave British non-commissioned officer can aspire, is that of two flags embroidered on his right arm, of which he may be deprived by the arbitrary decision of his commanding officer. It is true all the officers and privates who were present in the battle of Waterloo, wear a silver medal, suspended by a red ribbon on their breasts; but this is rather rewarding good luck than valour. The custom of bestowing distinctions on regiments is better understood: any regiment which has distinguished itself in action, is allowed to inscribe the achievement on its colours. This practice obtained during the republic, but fell into disuse, we know not why, on the accession of the imperial government, although its advantages were manifest. What Frenchman did not feel himself inspired with the most noble sentiments, on beholding himself beneath the standard which had proved victorious at Arcola or Rivoli?

The discipline of the English army resembles, in many points, that of the French: the sacred attention to authority, the gradual accession to command, and the custom of annual

* We do not know that our military chaplains in India, who are attached to all those stations where large bodies of our European soldiery are congregated, report to any clerical or military superior regarding the performance of their duties, as superintendents of schools, reformers of culprits in solitary confinement, or spiritual comforters to the sick. But we think that commanding officers might with advantage be called upon for such reports.—*Editor Military Repository.*

reports from officers commanding districts, are entirely analogous to the principles adopted in the French army. M. Dupin seems, however, to infer, from the great degree of distance preserved between the officer and private in England, that the English discipline is superior to the French: this is decidedly an error. In England, where the army is recruited from the dregs of the people, where the majority are condemned to serve for life, where the subordinate officers rarely rise to the honour of a commission, it has been requisite to indemnify them for want of rank, by giving them a higher rate of pay, in order to render their lot an object to the troops, to excite in the latter the ambition of rising to the same distinctions, and to impress on the greater number, a salutary fear for those immediate regulators of their discipline.

But in France, where all citizens owe military service to the state, where the term of engagement is no more than eight years, where the private of to-day may become the subaltern of to-morrow, where the private is honoured for his valour by the same tokens that distinguish the officer who commands him, what end would be served by marking with so distinct a boundary the ranks of the army? Would it not destroy that congenial comradeship and brotherly feeling which has always formed the strength and honour of the French army? Let us not then envy this pretended perfection of English discipline; it too nearly resembles that of the Austrians and Russians; it divides that body which, according to our notion of our military constitution, should ever remain in unity. The great object of our discipline is to form the army into one family, all possessing the same sentiments and feelings: the opposite system renders the troops strangers to the impulse of affection, and reduces them to a mere assemblage of men, governed by the laws of coercion. Accordingly, in the day of trial, the officers and non-commissioned officers, instead of finding the troops animated with a noble desire of glory, following them when called upon, are obliged to keep them in a connected body by means of the halbert and the cane.

The penalties inflicted on the British army for neglects of discipline, differ according to the three classes which compose the army. The author does not speak of the penalties inflicted on

officers. Non-commissioned officers cannot undergo corporal punishment until their reduction to the ranks has taken place. The chastisements reserved for the privates carry with them every mark of cruelty. The infliction of the gauntlet and piquet have been banished from the army; but the lash, the most horrid of all, is still preserved, and is frequently used with all the wantonness of barbarity for but trifling errors.

The army of England mixes much more with the citizens than that in France. From the time that an officer leaves off active service with his regiment, he throws off every military distinction, and mixes with the body of the people. If the non-commissioned and privates continue their uniform, they leave their arms with their regiment. When on this subject, the author expresses a wish to see the permission for carrying swords, at present allowed to the lower classes of the French army, discontinued; but we think, with him, that while so many of the civil functionaries consider the sword as a necessary part of their costume, we shall find some difficulty in impressing the French soldier with the inutility of wearing his sabre.

The reviewer, after touching on the Military Schools, the Military College, both senior and junior department, and the Royal Academy at Woolwich, proceeds to remark, that the Royal Military Repository is not merely, as its name indicates, a collection of models, but a practical school for artillery. It is not levelled and flat, like those in France; it extends from a distance inland to the borders of the Thames, and encloses in its boundary, hills and valleys, with a river, an island, woods, marshes, defiles, crooked ways, and straits, in short every situation which can possibly offer itself for artillery operations in actual warfare*.

This establishment, which originated with the two Congreves, is altogether perfect: the mode of instruction, however, is not entirely free from exception. The officer directing the instruction not belonging to the corps of artillery, a sort of professional jealousy exists in those under his command, who are content to go through the forms prescribed by the instructor, while they take a secret pride in not availing themselves of the advantages of the institution.

* When are we to see such grounds for artillery practice, at Dum Dum, St. Thomas' Mount, and Matoongha?—*Editor Military Repository.*

The practical school for engineers at Chatham has been established ever since 1812. Young officers and recruits for the corps are there received; the former on their quitting the college, the latter when they are sufficiently versed in the use of their arms. Officers and recruits for the service of the East India Company are also educated here.

The soldiers are organized in companies under the command of officers of the establishment, and are quartered near the school. The mode of instruction is practical for the officers, and both theoretical and practical for the troops; the latter receive lessons in reading, writing, geometry, linear design, fortification, and mensuration, all of which are inculcated by mutual instruction.

The practical instruction common to the establishment, consists chiefly in tracing and forming batteries, and executing fieldworks, and going through all the forms of a siege, opening a shaft, excavating a gallery or branch, and charging mines; constructing and repairing pontons, raising bridges of the different kinds used in warfare, in short, in performing all the duties analogous to the triple profession of sapper, miner, and pontoneer.

Every day (Sunday excepted,) at half past six in the summer, and at half past seven in winter, the troops are collected, and in half an hour from that time enter the halls of instruction, where they remain one hour. The rest of the day is devoted to practical labours, unless the day prove inclement, when they remain in the school two hours in the morning, and three in the evening. The duties of the officers consist in correcting the notes of the work performed by their respective classes.

Notwithstanding all the care taken by the British Government in the education of the officers intended for their artillery, it is evident that the French are superior to them. It is certain that the academy at Woolwich does not pursue its mathematical and chemical studies to the same extent with the French pyrotechnic school. On the other side, the practical schools at the Woolwich Repository and at Chatham do not surpass that of Metz. Add to this, that when the officers of the British artillery and engineers have once joined their regiment, they have no further opportunity of improving

themselves in the scientific part of these professions, as in the regimental schools of France. It is not, under these circumstances, matter of surprise, if the French officers of artillery be more profoundly learned in their profession than those of England.

But if the more advanced military schools of France take the lead of those in England, it appears to us that the first elements of instruction are much better conveyed in the English army than in ours. All the British regiments, both of cavalry and infantry, have schools where young soldiers and the children of the troops are instructed : they learn reading, writing, and arithmetic, after the principle of the celebrated Lancaster. The same mode of regimental schools (by mutual instruction) was attempted in France under the administration of the Marshal de Saint Cyr. The results of the experiment, however, were not satisfactory, and they have returned to their former method.

The Royal Military Asylum does honour to the national character of Britain ; it is open for the reception of children of both sexes, belonging to non-commissioned officers and soldiers who may have fallen by the chance of war, or are absent on service. It consists of an immense establishment at Chelsea, with a receiving house at Southampton, including, altogether, about 1600 orphans. They are received at all ages, from the breast to fourteen years, and are then taught reading, writing, and arithmetic, on the plan of Dr. Bell, besides obtaining the advantage of instruction in mechanical employments, as taylor and rope-makers, &c. This education is perfectly gratuitous, as the children, on quitting the service, are not compelled to enter into the military service.

The principle and management of this establishment are perfect ; we regret that nothing similar exists in France. Our Royal Colleges are far from fulfilling the same ends with the institution at Chelsea. There the children of private soldiers are not admitted, and no officer's child is even eligible who has not attained the age of twelve years : and on what, before that age, can the orphan even of an officer exist, who has left nothing to his widow, but a name, to which the brave will do homage ?

The third book of Dupin embraces two subjects which should certainly have been treated separately,—Exercises, or the Elements of Tactics, and an account of small arms, a section which should have been comprised in the succeeding chapter.

The English regulations for infantry manœuvres were published in 1791, those for the cavalry in 1796. They are conformable to the principles which regulate our own, in all which relates to the management of arms, forming into column or line, and in changes of formation. We regret that the author has not taken occasion to speak of the cavalry exercises; while on the other hand, we feel much gratification in observing, that he has given the results of some important experiments made in London in 1802, in order to ascertain the comparative swiftness, advance, and resistance in cavalry, infantry, and artillery respectively. By these means the different times taken by cavalry and infantry in the charge was ascertained, and in the same manner the number of artillery and musquetry rounds capable of being discharged during the charge. Grape being discharged at a target placed at different distances, whose front occupied the same space as a regiment of cavalry, the effect of grape against cavalry was fully ascertained. The results of these experiments are the more interesting, as they serve to determine the principles of attack with one species of arm against another*.

M. Dupin, in treating on the infantry exercises, submits opinions which are well worthy of consideration: he points out, in the march and manœuvres of the English troops, modes well worthy of imitation. Amongst these he notices the practise of gymnastic exercises, which assists so much to develope the muscular powers, but which finds so few admirers among the French army; the march regulated by beat of drum; the echelon march instead of the oblique step, which last is both slow and difficult of execution; a method of porting arms, which, though less graceful, is infinitely more convenient and firm than that which now obtains; and the habitual formation of two ranks, which has the advantage of extending the front one half, of facilitating the discharge of musquetry,

* Vide Lieut. Russell's work, detailing experiments made in Hyde Park in 1802.—*Ed. Military Repository.*

and the movement of the troops, without rendering their change into squares for the reception of cavalry more difficult.

A manœuvre unknown to the French infantry, and which is taught in the British army, is the rallying square. At the word of command, the soldiery unite close by their officer, with arms at the shoulder; the first six form to the right and left; the next three in front, and the next three form behind the first rank: the square thus simply formed, is strengthened by the next four parties that arrive, which gives a full square of twenty-five men two deep, not including the instructor. If this square be reinforced by four men in front of each angle and four men on each side, a solid body of nine men presents itself, and so on*. The square is faced toward that part threatened by the enemy; and before putting the square in march, they are faced, by word of command, to the direction in which they are required to move.

The hints for the light infantry are peculiarly suited to advance their science. We cannot give an idea of them without extending this article beyond bounds, which are already too long. We particularly recommend this part of M. Dupin's work to officers of the light infantry and of skirmishers, (*voltigeurs*.) thinking that it has the strongest claims on their attention.

In the English infantry, corporals and select men only have the fusil and bayonet. The non-commissioned officers carry the halbert and the sword, and the officers, the sword alone. It would be well to correct the mode of arming the French infantry, by discontinuing the use of the sword to corporals, grenadiers, and skirmishers, which impedes them in their movements, and to supply the first with a light and keen axe, which would be very serviceable in bivouacs; and arms similar to our naval cutlasses should be given to the non-commissioned officers, without laying aside the use of the fusil.

The fourth book is devoted to observations on the formation of artillery. The author (who may assure himself that it is his exertions that have principally called the attention of

* The French Editor has not well described the rallying square.—*Ed. Military Repository.*

the French government to the excellence of the British field artillery) enters deeply into the details of the British system, which, it is well known, unites the advantages of the greatest simplicity, with the greatest uniformity and ready exchange of parts, united to a capability to be brought readily into battery, or limbered up. The carriages are of easy draft, and offer accommodation for ten men, as well on the carriage of the piece, as on that of the waggon which follows: they can be drawn by pairs of horses abreast, or by single draft, one horse before the other, and the ammunition is lodged without difficulty: in fact, this system for field artillery has but one limber, one wheel, one axle, and one handspike, which considerably diminishes the quantity of supplies which the train is compelled to carry, to provide for contingencies. These manifold advantages have struck the officers of the French artillery, and the author makes us acquainted with their details. We are now employed in correcting the faults of Gribeauval's system, but our emendations still leave our artillery carriages much inferior to the English. We have modified the British carriage; and have substituted a pole for shafts; and carriages on this principle are at present under trial*.

The preparation of Congreve's rockets is conducted in the strictest privacy. The information which M. Dupin affords relative to their composition, their range, their uses, and effects, excites the most lively interest, although the treatise of M. Montgery on the same subject has so recently appeared. These rockets, composed of chlorate of potass, sulphur, and charcoal, (of which the proportions differ according to the effects required,) will propel shot of any calibre, either grape, carcass, or fireballs. It is proposed to adopt the use of the two former on field service: the one carrying a shrapnell shell of nine pounds to the distance of three thousand yards, and the other grape to the distance of

* In Bengal also, poles have been substituted for shafts. But we have no hesitation in stating our conviction, that shafts are far preferable to poles, or that the little weight to be supported, is better placed on the back of a shaft horse, than suspended from the neck of the two pole horses.—*Ed. Military Repository.*

two thousand. The shrapnell rocket is thrown from a field carriage capable of containing fifty-four rounds, and requires only four men for its duties. The grape rocket can be carried by hand, three or four per man. The two other species of rockets may be employed advantageously in the attack of towns; they may be thrown without apparatus, by means of a howitzer*, or by a portable frame. Two of these frames and a hundred rockets may be easily conveyed on one carriage, and four men are sufficient for the duties of the two frames. When the fire of the two frames is required to be directed on one point, they should be separated about ten feet from each other. From experiments made in 1819, it is contended that rockets have proved more accurate in their range than gun shot at moderate ranges†. The field batteries of the English are composed of pieces of 12, of 9, and of common and light 6 pounders. Every battery is composed of six pieces, of which one is a 5½ inch howitzer. The draft differs for these according to the weight of metal, from 21 carriages to 15, and from 104 horses to 77. The personal equipment which is attached to these, consists of a brigade of 20 officers, six non-commissioned, and sixty gunners, with an equal number of the artillery train drivers.

The artillery for sieges, consists of pieces of 24, 18, and 12 pounders, of howitzers of 10 and 8 inches, and of mortars of 13, 10, 8, 5½, and 4½ inches. In some instances 68 pounder carrouades, mounted on field carriages, are substituted for 8 inch brass howitzers. Siege pieces are made either of brass or of cast iron. We have observed, during the last war, that those made of iron have proved the most serviceable, as they resist the effects of fire longest.

The fifth book treats on the "Arsenal Operations and the Management of Artillery Parks." With the exception of the manufacture of gunpowder, the casting of iron guns, and some inconsiderable repairs, the whole formation of artillery is conducted in the arsenal of Woolwich. It is from this grand depôt that the immense supplies of Chatham, Portsmouth,

* This is a mistake; rockets are never fired from ordnance.—*Editor Military Repository.*

† An error.—*Editor Military Repository.*

and Plymouth, as well as the stores retained in the minor depôts of Great Britain, are transmitted.

Such an establishment offers a vast fund for observation, which M. Dupin has examined with a penetration which proves him no common observer. The Arsenal at Woolwich is divided into four départements. The three first are each directed by a general officer, and the fourth by a field officer. The four divisions of the department consist of the laboratory, the model repository, the department for the examination of ordnance, and the train.

Every species of ammunition necessary either by land or sea, is manufactured in this arsenal. The government does not, however, reserve to itself exclusively the manufacture of powder, but besides being supplied from the royal establishments of Feversham and Waltham, is occasionally supplied from private manufactories. Two sorts of powder are manufactured, one for the ordnance, the other for small arms. The hydraulic press is employed to compress the constituent parts of the gunpowder with proper force, and consequently to render the grain concentrated and dense. On this account, but more particularly owing to the peculiar excellence of the charcoal, the British powder had formerly a marked superiority over our own; but the powder manufactory of Bouchet, near Paris, at present produces a fine powder superior to the English. The modes introduced by Bouchet will be speedily followed by the other factories in France, which now promise to produce powder in no degree inferior to that of England. The model room properly so called, is comprised in a rotunda of thirty-six feet in diameter, and contains a vast collection of models and machines, proper for the service of the artillery, of engineers, and the marine. We have already mentioned, that near this place the school of practical artillery is established. It is near this spot that the experiments, first commenced by Hutton in 1811, to ascertain the initial velocity of shot, are still continued, by means of a ballistic pendulum, with two revolving disques. The details into which the author enters, prove that no labour has been spared to secure precision in the action of the disques, or to give to the pendulum the necessary degree of accuracy, both in the construction and suspension, in the method employed to measure the vibra-

tions, in the observations on the state of the atmosphere before and after the experiments, and in the method of charging and discharging the piece.

The department of the inspector of ordnance manufactures brass, and examines iron guns, and musquetry, in apartments appropriated to those purposes. The process of casting brass pieces is nearly the same in England as in France, except the boring machines, which with us are still moved by horses, as formerly in Holland. The manufacture and repairs of small arms are conducted at London and Birmingham, to which factories the government supply all the materials, except wood and copper. When the different parts of the musquetry are finished, they are sent to the Tower of London, where the wood is procured, and they are there mounted. They are then sent to Birmingham, where they are proved with strict attention, in a room lined with iron, and every way strengthened for the prevention of accidents. The barrel of the old English fusil is stronger than the French, without being heavier, on account of its shortness. The last model given for imitation in 1817 differs little, however, in its principle, from the French one of the year 1809. A spring fixed to the handle of the bayonet, and pressing against the barrel of the piece, supercedes the use of the mortice adopted by the French.

But that which is most remarkable in the English musquetry, is their browning, or colouring : it assists the preservation of the piece, and, amidst various other advantages, does not, by its gleaming, give information of the position of troops.

All ordnance carriages and waggons are constructed in the train department. This has furnished a great fund for the author's observation. The use of the hydraulic press is here universally adopted : it is employed in packing, to compress into the smallest possible space, the different articles issued from the department. The steam engine is also applied to the planing of wood, and turning of metals, the machinery of which is well described, and illustrated by plates : it performs many mechanical operations, such as turning spunge staves, &c. ; it saws, divides, and forms wood into various forms, for ordnance purposes, with saws, &c. of different kinds, all wrought by steam.

ART. VII.

ON THE MECHANICAL POWERS IN USE WITH
THE KING OF SARDINIA'S ARTILLERY.

Manopere di Forza ad uso del Corpo real d'Artigliera, di il re di Sardegna. Turin 1823.—A work treating on the Mechanical Powers in use with the Artillery of his Majesty the King of Sardinia. The following account is given of this book in the “Bulletin des Sciences Militaires.”

This work is divided into three parts. The first, consisting of ten chapters, enters on the merits of the various mechanical powers applied to artillery purposes. The second explains the methods of mounting and dismounting the different heavy pieces of ordnance, and of repairing the accidents to which they are liable. The next relates to the mounting and dismounting of field pieces, and to the different expedients for repairing their injured carriages, the embarkation and disembarkation of artillery on rivers, and other points connected with the conveyance of ordnance across water; likewise the recovery of such guns as may have sunk, the management of pontoon equipage, and finally, the best method of transporting artillery in mountainous countries. It appears that in this essay the author has endeavoured to form a complete manual for the mechanism of artillery. The book is written with strict regard to perspicuity and method, and bears marks of extensive information. Every point is clearly defined; the author has enumerated the dimensions, not only of the component parts of the mechanical powers of artillery, but of all their apparatus, and detailed the personal force necessary for their duties: he has introduced some good alterations in the words of command, while he has banished others from the military vocabulary which were unnecessary, and has employed the same words for the purposes of caution and execution. We are surprised, however, at an error into which he has fallen, in the rejection of the technicalities of the science, and the occasional introduction of some terms, which are so general and undefined that they

convey a very imperfect and obscure idea of the object intended.

Notwithstanding this trifling defect, we think that the author has fully accomplished the end he had in view. The compilation is good, and forms a methodical selection of the most useful instruction from Antoni, Hoyer, and the great body of French military authors. We have some reason to think that the author has served under the standard of France.

ART. VIII.

ON THE COMPARATIVE ADVANTAGES OF THE
HORSE AND FOOT ARTILLERY.*Parallèle de l'Artillerie a Pied et de l'Artillerie a Cheval.*

A Treatise on the comparative Advantages of the Horse and Foot Artillery ; a Mémor read at the Royal Military Academy of Sweden. The following notice is given of this work in the “ Bulletin des Sciences Militaires.”

After having discussed the advantages and disadvantages of the horse and foot artillery, the author recapitulates his reasoning in fourteen conclusions ; namely, 1st, That the equipment and support of the horse artillery is much more expensive than the foot ; 2dly, That the duties of a foot artilleryman are easier attained than those of an artillery trooper, which combine the duties of a cavalry trooper with those of an artillery gunner ; 3dly, That there is less inconvenience in providing for the foot artillery when on a march than for the horse ; 4thly, That the foot artilleryman can at all times devote the whole of his attention to his gun, whereas a great portion of the time of the artillery trooper must necessarily be dedicated to his horse and equipments ; 5thly, That, in case of surprise, the foot artilleryman can be brought into action more readily than the horse trooper ; 6thly, That the horse artillery, forming on the march a much longer line than the foot, it is more difficult to preserve order ; 7thly, That horse artillery can move with greater ease and rapidity than the foot, over soft, unequal, or marshy ground ; 8thly, That the horse artillery is better capable than the foot of supporting long and forced marches, and of executing rapid manœuvres ; 9thly, That the horse artillery, when well disciplined, are able to perform the duties of their guns with only two men to each piece ; 10thly, That the horse artillery has decided advantages, by the rapidity with which its advances and retreats can be performed ; 11thly, That the ammunition carriages of the horse artillery may be left in the rear, in the execution of manœuvres ; 12thly, That in case of disability in the horses from

fatigue, the horse artillery can perform the duties of the foot ; 13thly, That the horse artillery are much more liable than the foot to inconvenience and confusion, arising from casualties occurring to horses ; 14thly, That the horse artillery can cover their guns by their own troopers, whilst the assistance of other troops is indispensably necessary with the foot.

In this discussion, the author imagines he has replied to every objection which can be raised against either species of artillery. He proposes to attach the horse artillery to the cavalry, and the foot to the infantry, to obviate the embarrassment which each must otherwise experience in their movements relatively to each other. He thinks it advisable to adopt pieces of the same calibre in both horse and foot artillery, such as have been proved efficient, and by their lightness admit of facility of movement. Experience has proved that long six pounders, and seven and a half inch howitzers unite these requisites. The English, on field service, on account of the excellent construction and compactness of their guns and apparatus, and the vigour of their horses, use nine pounders, and howitzers of $5\frac{1}{2}$ inch calibre with advantage : their nine pounders weigh, altogether, 3,928 pounds. In regard to six pounders, the author thinks, that if one hundred and fifty pounds of metal be allowed for every pound in the shot, giving every gun seventeen diameters of the bore for its length, with a charge of one third the weight of the shot, (that is to say, two pounds for a six pound shot,) the principle will be found correct. For field batteries he recommends limbers, drawn by four horses, and weighing altogether twenty-six quintals ; and refers for support of his opinions to different military works published in Sweden in the year 1820.

ART. IX.

ORGANIZATION AND TACTICS OF ARTILLERY.

On the Organization and Tactics of Artillery, with an Account of its Advance, from the earliest period to the present day, by W. De Grevinitz, Major in the Prussian Service. In 2 vols. 8vo. with 43 Plans. Berlin, 1823. Sauder. —In reviewing this work, the editor of the *Bulletin des Sciences Militaires* observes as follows.

After having given a general sketch of the history of the military art, the author treats, in his first volume, on the history of artillery tactics, and divides his subject into five epochs. The first extends from the year 1320 to 1494, that is to say, from the invention of gunpowder and ordnance, to the expedition of Charles the VIII. in Italy. The second embraces the interval from 1494 to 1612, or from the time of Charles the VIII. to that of Gustavus Adolphus. The third details the improvements made in artillery from 1612 to 1740, or from the time of Gustavus Adolphus to that of Frederick the Great. The fourth includes the time from the war of Bohemia to 1792, or from the time of Frederick to that of the wars of the French revolution. And in the fifth division, from 1792 to 1815, the character which this important arm sustained, during the sanguinary wars which were carried on in every quarter of Europe, for a period extending to twenty-three years, is duly set forth.

The second volume enters on the organization and tactics of artillery: it is divided into five chapters. The first treats on the composition and power of artillery, and its connexion with the other branches of the army, and includes a calculation of its expense, as well for the first purchase as for the subsequent support of its establishment: the second treats on the elements of artillery manœuvres, with fifty-one plates of tactics: the third on the ranges and effects of field artillery: the fourth on the union of artillery with infantry and cavalry, both for attack and defence; and the fifth on the attack and defence of intrenchments, and on the service of artillery in the field.

ART. X.

MILITARY LIBRARIES IN DENMARK,*Translated from the Bulletin des Sciences Militaires.*

The most ancient of these is that established for the "Cadets de Terre," about the year 1750, which has been subsequently augmented, by the different commandants of that body. It is under the management of a committee, and is supported from the funds of the regiment. In the year 1822 it consisted of 3846 volumes, besides a collection of charts and mathematical instruments. An officer is nominated from the body as librarian.

The Danish artillery possesses also, since 1789, a military library, under the direction of its commanding officer: it consists, exclusive of its manuscripts, of more than a thousand volumes. The artillery of Holstein has likewise a small collection at Rendsborg. There is likewise a library of about the same number, with a collection of maps and a chemical laboratory, attached to the institution for cadets of artillery.

The library of the general staff has existed since the year 1786, and comprehends near 1200 printed volumes, the topographical works of the regiment, and a considerable collection of charts and plans. About 2400 francs are annually appropriated to the purchase of books, maps, and other necessities. The library of the garrison of Copenhagen, established by a military society, consists of two thousand volumes, besides plans and maps; and is under the management of a committee chosen from the officers of the garrison. All officers are admitted free. A trifling acknowledgment is paid to the fund, when works are taken from the library.

Until lately, these were the only military libraries in Denmark. Since the sojourn of the army in France, the want of instruction has been sensibly felt in the Danish army, and libraries have accordingly been established at the expense of the officers, by most of the leading regiments of the crown.

ART. XI.

A TREATISE ON ROCKETS

FOR MILITARY PURPOSES,

By Montgery, Captain in the Navy, Member of the Order of Saint Louis, and the Legion of Honour, and of numerous learned Societies, French and Foreign ;—as reviewed in the Bulletin des Sciences Militaires for December 1825.

This treatise commences with the history of rockets, from the period when they were used under the name of Siphons in the lower empire, to the time of Congreve. This weapon, according to the author, having long ago been used in Europe, and still obtaining in Asia, Congreve can claim no merit for their invention, but merely for that of improving them for the purposes to which they have more recently been applied.

In the second chapter, he discusses the theory of the motion of rockets. M. Montgery compares the hypotheses of Mariotte and Nollet, on the subject of the elevation of the rocket, with those of Desaguiliers and Antoni; and shews that past experiments are far from conclusive on the question, "Whether the momentum of a rocket diminishes in the ratio of its velocity." The author then compares the action of gunpowder to that of steam, "*donne les roues a reaction*," and imagines that the elevation of a rocket is not produced simply by the pressure of the expanded fluid discharged by the composition of the rocket, but likewise by the resistance which the external air opposes to its egress. He then proceeds to a discussion on the methods of firing rockets, and on their range; and shews that their principle, in this respect, differs materially from that which regulates other projectiles. After having reviewed the researches of Mr. Moore, regarding the greatest range and elevation of a rocket, its track at any given angle, its degree of momentum at any point of that tract, and finally its range when the angle of projection and time of its combustion is given, he demonstrates how difficult it is to apply these theories to practical purposes,

the direction of the rocket depending so materially on the shaft and on the action of the air. He then proceeds to shew, that the rules for pointing rockets must always be regulated by the state of the atmosphere. This chapter concludes by a table, in which the velocity and momentum of the rocket, and that of shells, are compared and considered; and it is shewn, that although that of the former is at first less than that of the latter, it finally becomes greater. The manufacture and the application of rockets form the subject of the third chapter. No other rockets have been made in France, according to M. Montgery, but such as were used by the English in 1809 for the attack of the island of Aix. These are 31 centimetres in circumference, 1 metre in length, and weigh 10 kilogrammes. Their cases are cylindrical, and conical at top. They contained, in the lower division of the tube, a rocket composition, and in the other carcass composition, of which the author details the materials. They did not succeed, in consequence of some fault in their manufacture.

The author enters into all the details of the construction of rockets, and gives a table of their diameter, weight, and composition, with the angle of their discharge, and their range. This interesting table is extracted from the Memoir of Messieurs Bourré and Morton, two gentlemen who undertook to report the results of experiments made in France in 1810—15. After having enumerated the methods followed in the different arsenals in France in the construction of rockets, M. Montgery proceeds to decry the apparatus at present used for their discharge and conveyance: this, it is well known, is a species of carriage mounted on four wheels, with a limber, calculated to convey a certain number of rockets. This carriage might be reduced to a frame, and the rockets might be discharged from stakes placed at an elevation to suit the discharge of the missile.

The fourth chapter enters upon the advantages and disadvantages of the Congreve rockets. The author states the variety of opinions entertained respecting them: he quotes numerous passages from the history of the last war, which prove that the use of the rocket has not been attended with the same advantages as that of other projectiles. The comparative table affixed to this book, exhibiting the stores and apparatus neces-

sary for mortars, howitzers, and rockets respectively, tends to exhibit the inutility of rockets for siege purposes; were it not that they are less expensive than siege ordnance, and unattended with the difficulties in trenches, carriages, and platforms experienced with the latter.

M. Montgery exhibits, in the fifth chapter, the improvements and recent applications of this arm. He details the improvements made by Congreve, from 1810 to the present time: he shews how the form of the rocket became progressively changed; how the cylindrical tube was transformed into a truncated cone, with an acute apex; how the composition was varied, and the carcass composition, first used, gave place to shells, to shrapnell, and finally to gunpowder. This chapter concludes with a series of interesting notes on the different species of rockets used for signals, and on those manufactured in Denmark, Sweden, Prussia, Austria, America, and British India.

The following chapter gives a detail of the different sorts of rocket that may be advantageously employed in land or naval warfare; and the author submits, that we should endeavour to apply percussion, breaching, and sub-marine rockets to naval purposes. He compares the train now actually necessary for an artillery equipment, with what would be required in addition to a rocket equipment, and shews that the artillery would require to employ no more than 2 calibres of ordnance in place of 7, and 6 sorts of projectiles instead of 15; that garrisons would want only 2 instead of 20 kinds of ordnance, and only 9 species of projectiles in place of 40; that, in the navy, 6 kinds of ordnance would answer the purpose of 23, and 10 projectiles that of 53; lastly, that 2 sorts of artillery, with five or six sorts of rockets, would answer every end obtained by the immense *materiel* at present employed. We feel convinced that the results of the author's opinions might be advantageous, and certainly think that his plans should become the subject of a serious examination, with which neither military prejudices nor established customs should be allowed to interfere.

The seventh is a compendium of the preceding chapters, and the author insists strenuously on the necessity of adopting the use of the rocket. He attributes the numerous failures which the French have experienced in this species of

missile to the method in which their information on this subject has been procured. He recommends, instead of sending French officers into a strange country to collect hasty information, which must necessarily be imperfect, that foreign artisans be employed, that their practical knowledge may be brought to the assistance of those who have made the rocket theoretically their study ; and concludes his highly interesting work, by proposing different measures to accelerate the revolution in military knowledge at present, so rapidly gaining ground.

NOTICES OF NEW WORKS.

We observe that a work is announced, which cannot fail to be acceptable to all who have borne a part, or take an interest, in the late war with Ava. The publication professes to be a compilation of documents illustrative of the war, consisting of the dispatches, official and demi-official, which have been published, and of other unpublished papers. A collection of the first description of documents will be highly convenient for reference, as it is impossible to trace them through the voluminous files of newspapers among which they are scattered, or to preserve them in so unwieldy a form. We may conclude also that they will be arranged according to their dates and local appropriation, so as to form a connected series of illustrations. But besides these advantages, we understand the collection will comprise a considerable number of interesting documents, particularly those illustrative of the commencement of the war, which are either wholly new, or have been but partially and imperfectly given to the public. The compilation is to be preceded by a narrative of the war, and will be further illustrated by a map of the countries in which it was prosecuted. The compiler and author of the narrative, is understood to be the present Editor of the Government Gazette.

In addition to the work on the late war in Ava, under preparation by the highly accomplished scholar above alluded to, we feel satisfied our readers will be happy to learn, that Lieut. Forbes of the Engineers, is now engaged in preparing for the press, an Account of the late Siege of Bhutpoor. We are authorized to add, that Lieut. Forbes will feel grateful to officers engaged in the operations of that siege, for any information either regarding the department to which they belonged, or individuals under their command, which from its general interest, may be considered worthy of communication.

As we understand that the question of the reduction in the Windage of our brass ordnance in Bengal is not yet decided upon, and that it is likely the bores of that description of artillery will, for the present, remain the same as those heretofore in use with

the Royal Corps in England, at Madras, and Bombay, we have deferred submitting our intended account of this question in the present number.

Two works have lately reached us from the English press, on which we hope to offer some remarks in our next number. The one is a pamphlet entitled, "Remarks on the Exclusion of Officers of his Majesty's Service from the Staff of the Indian Army, and on the present State of the European Soldier in India;" the other a work in 3 volumes octavo, with a separate volume of plates, entitled, "The Theory of the Infantry Movements," by Antonio Sussasso, the author of the British Drill, which appears to be a book of great merit, evincing much military reading, information, and research, and will, if we mistake not, become a standard work for reference in all our military libraries.

It was our intention to have given in this number the "MILITARY REGISTER," which we promised in our last; but a pressure of matter which has made us exceed our limits, obliges us to postpone it until our next.



ERRATA.—Page 490, lines 23 and 24.

Instead of "*to be congregated into 10, and the latter into 69, instead of into only one,*"—read, "*to be divided into 10, and the latter into 69, instead of being congregated into only one,*" &c.

FINIS.

